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EDITED BY

John M. Kleeberg

Coinage of the Americas Conference
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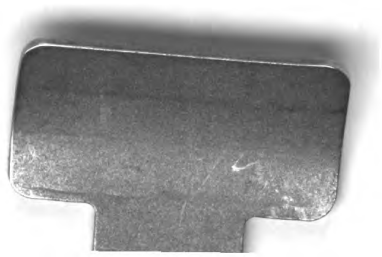
November 9, 1996



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Coinage of the Americas Conference
at the American Numismatic Society, New York

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Contents

Preface

The United States large cent was the subject of the twelfth Coinage of the Americas Conference, sponsored annually by the American Numismatic Society. Since its inception, this program has enjoyed the enthusiastic support of the Society's governing Council as a forum for the dissemination of emerging research in the coinage and currency of North and South America.

The purpose of these conferences is to facilitate the exchange of information. Toward this end, experts in the field are invited to present papers, collectors are invited to exhibit, and notice of the conference is circulated widely to encourage attendance by all who have an interest in the topic. The Society also mounts an exhibition from its holdings and invites registrants travelling to the New York area to come to know the Society's collections and library better during the days surrounding the conference.

A number of special exhibits were mounted on the theme of COAC 1996 and remained on view at the Society for several months. Two exhibits featured material from the Society's collection: one exhibit showed unusual cents from the ANS collection, such as Clapp-Newcomb 34, the Saltus-ANS strawberry leaf cent, and the Clapp-ANS Jefferson head cent, the finest known example. The second exhibit, by ANS curator of medals Alan Stahl, showed medals from the early United States Mint. Conference speaker James Neiswinter showed numismatic literature associated with Joseph Levick, including two varieties of Levick plates; Mark Borckardt put on a display of large cent restrikes. Daniel W. Holmes, Jr., brought two of the four known strawberry leaf cents to the conference and exhibited them as well; for this we have to thank Anthony Terranova, who coordinates exhibits for the Coinage of the Americas Conferences. Del Bland co-chaired the conferences and contributed much to its success.

Contributors

The Society is grateful to the following contributors who helped make the 1996 Coinage of the Americas Conference possible:

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Introduction

Large cents are studied with an intensity that is devoted to no other coin series. This long tradition makes many contributors to the study of large cents interesting objects of study in themselves. James Neiswinter in this volume discusses Joseph N. T. Levick, just as John W. Adams discussed Benjamin Collins in the first COAC volume. Large cents are a very narrow series; that is one of their advantages. They were made by a mint with a small output for a country with a small population. The population of Philadelphia in 1790 was 28,522, and we know from documents that large cents, at least in the 1790s, did not circulate much beyond Philadelphia. Rome during the Empire, by contrast, had a population of over a million. A die study of large cents is difficult, but it remains comprehensible. A die study of Roman sestertii - a coin made in greater numbers for a much larger population - can prove to be very complex.

Despite this narrowness, the numismatist is confronted in the large cent series with nearly every possible numismatic problem. Large cents have been arranged in series according to every numismatic method: style, die studies, and hoards. The cents of 1794 can be arranged into those with a head which resembles those used on the liberty cap cents of 1793 - the head of 1793; a head which resembles those used on the cents of 1795 - the head of 1795; and a head which resembles neither, which is called the head of 1794. This is a standard stylistic arrangement. After the work of Crosby, Maris, and Hays, cents began to be arranged according to die chains. Sheldon carried this process further. Clapp suggested a re-arrangement according to edge designs for Hays 1, 2, 3, and 4, so that the arrangement went Hays 4, 3, 2, 1; John Adams has suggested that Hays 3 was actually the first cent minted in 1794; and this remains a topic of much dispute. George Ewing studied edge markings in the volume published after the first COAC of

1984, *America's Copper Coinage,* and the use of edge markings to determine the emission sequence has been applied by Russell Logan, Ivan Leaman, and Donald Gunnet to the half dollar series; some of this work is in the volume published after the 1986 COAC, *America's Silver Coinage.* Walter Breen used hoard evidence to re-arrange the emission sequence. In his 1952 study of the Goodhue-Nichols find, Breen concluded that S-104 (rusted dies), S-118, S-119, S-123, S-135, S-136, and S-137 were all delivered in the same batch. Denis Loring, in his contribution to *America's Copper Coinage,* discussed four methods of determining the emission sequence: die chains, die deterioration and repair, design characteristics (i.e. style), edge devices, and planchet quality. In the article Loring pointed out the existence of die remarriages, which Logan later demonstrated for the half dollar series. Planchet quality remains under-utilized as a tool for analyzing large cents, as opposed to our half cent brethren, who happily distinguish between "cent stock" and "token stock."

Because large cents have been studied so intensively, conclusions about cents have been applied to other numismatic fields. The survival estimate rule of one percent for gold, two percent for silver, and three percent for copper derives from Breen's and Sheldon's work on large cents, in particular those of 1794. The study of large cents also allows us to test conclusions from other fields of numismatics, such as die link formulae and die life estimates.

At the 1984 Coinage of the Americas Conference, Walter Breen proposed a very radical theory of device punches for the cents of 1794; this was published in *America's Copper Coinage.* Aspects of this theory will be reconsidered in my contribution to this volume. The letter punches are another area where further research might prove fruitful, particularly in light of the involvement of typefounders with the early mint, as R. W. Julian points out. *America's Copper Coinage* included David Cohen's study of the Randall hoard. This volume includes another hoard study, by Steven Ellsworth and Christopher Schwerdt on the Butternut hoard.

Imitations (the Unity States tokens: discussed by Fuld at the 1995 COAC, published as *Coinage of the American Confederation Period*), private patterns (the Jefferson head cents), official patterns (the Birch cents: discussed in the same Fuld article), counterfeits (1848 small date cents, and, I would argue, the strawberry leaf), altered dates (1815 cents), altered dies (Crosby 3-B), restrikes (1804, 1810 and 1823) and electrotypes complicate the study of large cents. Neiswinter discusses

the electrotypes and the Crosby 3-B; Julian the Jefferson head cents; the hiatus of 1815 is treated by John Wright; I write about the 1848 small date and the strawberry leaf cents; and Mark Borckardt and William Metropolis analyze the cent restrikes.

Finally, two technical aspects are handled by Denis Loring and Craig Sholley. Craig Sholley publishes early U.S. coining dies from the ANS collection. A pair of dies in the ANS collection for an 1883-CC silver dollar was published by me as an appendix to the volume, *America's Silver Dollars.* Denis Loring explains what is, and what is not, a proof large cent.

Counterstamps and overstrikes remain a very active area of research in large cents. David Bowers wrote a fine piece on counterstamps on large cents for the 1994 COAC volume, *The Token: America's Other Money;* counterstamps on silver dollars were discussed by Robert Stark in the 1993 COAC volume, *America's Silver Dollars.* Overstrikes are an area where there is also much research going on, particularly after the spectacular discovery of a half cent overstruck on die variety Clapp-Newcomb 34. Occasionally cents were overstruck on other coins: on Talbot, Allum and Lee tokens and on Conder tokens. More commonly, large cents served as undertypes for other coins, usually counterfeits, such as the Brazilian 80 reis. The recent book by Keith Davignon on counterfeit half dollars should encourage further study of this, since the large cents overstruck with half dollar dies are usually counterfeiters' trial strikes.

John M. Kleeberg
Conference Chairman

Joseph N. T. Levick

James Neiswinter

Coinage of the Americas Conference
at The American Numismatic Society, New York

November 9, 1996

Joseph Levick started collecting in 1852, becoming one of the first people in the United States to collect coins (fig. 1). He was a consignor to seven auctions, the first by Edward Cogan in 1859, the last by Thomas Elder in 1908. Levick was a born collector. Besides coins, he collected stamps, political items, currency, medals, and books. He is best known for his collections of store cards and Hard Times Tokens although his various coin collections included a Brasher Doubloon, a silver center cent, and a Birch cent (Breen 1988, 92). His three contributions to numismatic research occurred between 1868 and 1870. The first two, "A Table" (Levick 1868a) and then "the Plate" (Crosby 1869), were the starting points for all that was to follow on the most researched field in American numismatics, the large cent.

1. Joseph Levick.

The fever for collecting cents in sets did not start until 1857 when the Flying Eagle cent was issued for circulation. This change in coinage was the start of cent collecting, since the large cents were being recalled and melted by the mint and people realized that they would soon be hard to find. Before then cents were easily found in circulation, except for the '99s and 1804s which were considered rarer than the '93s (Levick 1868a, 48). Probably the first person to complete a date set of cents was Edward Cogan of Philadel-phia who took great pleasure in showing the coins in his store. (He is known as America's first coin dealer.) Levick was a frequent visitor to the store.

The Cogan Sale, November 1, 1858, is given credit by Levick for the "commencement of the *furore* for collecting fine cents and the paying of extraordinary prices for remarkable specimens" (Levick 1868b, 56). The account of this sale was written about in newspapers around the country and is what drew Levick's attention to collecting cents. Cogan also believed that the published results of the sale were the main cause of the great demand that arose for obtaining cents.

The sale was his complete date set, from Washington cents of 1791 and 1792 to a flying eagle cent of 1858 (fig. 2). The 1793 cents had a

ring, wreath, and liberty cap. There were thick and thin die examples of 1795. There was a fifteen star 1817 cent, and an 1839 booby head (maybe the first appearance of the term booby). The seventy-seven cents realized $128.68. There were nineteen mail bidders who bought all but three of the coins. On November 1, several of the bidders were invited to Cogan's store to see the letters opened. The names of all successful bidders are known today with the most famous being Joseph Mickley (bidder number five) who got the 1793 Liberty Cap for $7.25. It sold in his sale nine years later for $55. Due to the increase in the interest of collecting coin catalogues, Cogan was asked by several friends to print a priced catalogue of this sale. He did, in September 1863, almost five years after the event.

Levick called this sale the starting point for his collecting cents. In the next year he too completed a date set of large cents, obtaining many cents from Cogan's sales of the Foote and Gratz collections. Levick and other collectors had an advantage living in Philadelphia since they were able to go to the mint and select fine examples of cents at face value. This lasted until the mint employees learned to know the value of the cents and kept the better dates for themselves. In 1859 Cogan sold the first of Levick's four major collections, which included his recently completed date set.

Little is known about Levick's personal life. Circa 1860 he moved from Philadelphia to New Street in lower Manhattan. He enlisted as a private in the Seventh New York Volunteers during the Civil War and his obituary states he achieved the rank of captain (National Archives Military Records). In 1870 he opened an office as a broker in Gold, Stocks, Bonds, and Government Securities on Wall Street. His good friend Edward Cogan had opened a store nearby on William Street after moving to New York City in 1865. Levick became one of the founders of the New York Numismatic Society, and in December 1865 he joined the American Numismatic & Archaeological Society. The next year Levick and several others dissolved the New York Society and merged it with the American Numismatic and Archaeological Society (Adelson 1958, 42).

It did not take him very long to become active in the Society. He served as treasurer from 1867 to 1874, and in a regular meeting on March, 8, 1866 he proposed that a numismatic journal should be issued by the A.N.A.S (Adelson 1958, 56). Several European numismatic societies had been publishing such journals since the 1830s. At the annual meeting on March 22 his proposal was adopted. The first

Dates.	No. 1.	2.	3.	4.	5.	6.	7.	8.	9	10.	11.	12.	13.	14.	15.	16.	17	18.	19.	Highest Bidder.
Wash. Cent, 1791	.....	.....	.....	.....	.....	.....	$3 56	$5 11	.....	$6 10	.....	.....	.....	$10 00	$6 11	.....	.....	$5 00	.....	$10 00
Wash. Cent, 1792	.....	.....	.....	.....	$25 00	$18 00	.....	10 51	.....	.....	$5 00	.....	.....	15 00	.....	$28 60	.....	6 00	.....	28 60
Ring Cent, 1793	.....	$12 50	$12 50	.....	.....	.....	.....	6 28	.....	.....	.....	.....	2 50	5 00	6 75	6 80	.....	.....	.....	12 50
Wreath Cent, 1793	.....	8 50	4 05	.....	.....	.....	.....	1 11	.....	2 11	8 00	.....	.....	5 00	5 13	3 05	.....	.....	.....	5 13
Liberty Cap, 1793	.....	.....	5 05	.....	7 25	.....	.....	3 61	.....	2 68	5 00	.....	8 00	6 88	.....	.....	.....	8 00	.....	7 25
1794	$2 50	8 00	.....	.....	.....	.....	.....	0 68	.....	1 12	.....	.....	1 00	2 00	2 01	4 05	.....	1 50	.....	4 05
Thick Die, 1795	.....	2 50	.....	.....	.....	.....	.....	0 68	.....	.....	.....	.....	.....	0 75	.....	.....	.....	.....	.....	2 50
Thin do., 1795	.....	1 50	0 26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1 50
Liberty Cap, 1796	4 00	8 50	8 05	.....	.....	.....	.....	0 66	.....	0 66	.....	.....	2 00	0 75	1 89	.....	.....	.....	$1 25	4 00
Fillet Head, 1796	.....	1 25	.....	.....	4 00	1 25	.....	0 66	.....	1 61	.....	.....	.....	0 50	0 63	0 75	.....	.....	1 25	4 00
1797	1 50	1 00	.....	.....	.....	.....	.....	.....	.....	0 57	.....	.....	.....	0 75	0 63	.....	.....	1 00	1 25	1 50
1798	.....	2 50	.....	.....	.....	1 18	.....	0 68	.....	0 58	.....	.....	0 75	0 25	0 63	.....	.....	1 00	1 25	2 50
1799	.....	2 50	.....	.....	.....	.....	.....	2 11	.....	1 60	.....	.....	.....	7 00	.....	.....	.....	.....	.....	7 00
1800	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0 02	.....	.....	.....	.....	.....	.....	0 02
1801	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	$0 06	.....	.....	.....	0 81	.....	.....	.....	0 81
1802	.....	1 00	.....	.....	.....	.....	.....	.....	.....	0 82	.....	.....	.....	.....	.....	1 65	.....	.....	.....	1 65
1803	0 75	1 00	1 05	.....	.....	.....	.....	.....	.....	0 88	.....	.....	0 80	.....	0 26	.....	.....	.....	1 25	1 25
1804	5 50	.....	.....	.....	.....	.....	2 00	.....	.....	.....	.....	.....	.....	2 00	.....	.....	.....	8 00	.....	5 50
1805	1 12	0 50	1 05	.....	2 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	0 26	0 66	.....	0 75	1 25	2 00
1806	.....	.....	.....	$0 20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0 81	.....	.....	.....	0 81
1807	.....	.....	0 26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0 51	.....	.....	.....	0 51
1808	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0 25	.....	.....	.....	.....	.....	.....	.....	0 25
1809	.....	8 00	.....	.....	.....	.....	.....	0 51	.....	.....	.....	.....	.....	.....	.....	.....	.....	1 00	2 00	8 00
1810	.....	0 20	0 40	.....	.....	.....	.....	0 11	.....	.....	.....	.....	.....	.....	0 26	0 35	.....	.....	.....	0 40
1811	0 25	.....	.....	.....	.....	.....	.....	0 11	.....	.....	.....	.....	.....	.....	.....	0 55	.....	.....	.....	0 55
1812	.....	0 16	0 80	.....	.....	.....	.....	0 11	.....	.....	.....	.....	.....	.....	.....	0 55	.....	.....	.....	0 55
1813	.....	0 25	.....	.....	.....	.....	.....	0 11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0 25
1814	.....	0 84	.....	.....	.....	.....	.....	0 11	.....	0 28	.....	.....	.....	0 76	.....	.....	.....	.....	.....	0 84
1816	.....	.....	.....	.....	.....	.....	.....	0 11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0 11
Fifteen Stars, 1817	.....	.....	.....	.....	.....	.....	.....	0 26	.....	.....	.....	.....	.....	0 75	.....	.....	.....	.....	.....	0 75
1817	.....	0 25	.....	.....	.....	.....	.....	0 11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0 25
1818	.....	.....	.....	.....	.....	.....	.....	0 11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0 11
1819	.....	.....	.....	.....	.....	.....	.....	0 11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0 11
1820	0 50	.....	.....	.....	.....	0 40	.....	0 66	.....	0 28	.....	.....	.....	0 50	0 26	.....	.....	.....	.....	0 66
1821	0 87	.....	.....	0 80	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	$0 20	.....	.....	0 87
1822	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0 20
1828	.....	.....	.....	0 20	.....	.....	.....	.....	.....	.....	.....	.....	.....	0 28	.....	.....	.....	.....	.....	0 28
1824	0 88	0 60	0 45	.....	.....	0 86	.....	0 27	.....	.....	.....	.....	0 25	.....	.....	.....	.....	.....	.....	0 60

	1825	1 25	0 50				0 78		0 56					0 80	0 37	0 85	1 80			0 50	1 80
	1826		0 25		0 80																0 30
	1827				0 85						0 16										0 35
	1828	0 50	0 50	0 51				0 46			0 22			0 80	0 37	0 26					0 51
	1829																0 28				0 28
	1830																				0 08
	1831		0 25																		0 25
	1832		0 25																		0 25
	1833																				0 10
	1834	0 88								0 10								0 15			0 88
	1835				0 85					0 08											0 85
	1836	0 50	0 40						0 17		0 28				0 25	0 73					0 73
	1837		0 45						0 17	0 10	0 22					0 81					0 45
	1838								0 17												0 17
Booby Head,	1839		1 00			4 00			8 61		0 80			1 00	1 00	1 76	2 58				4 00
Large, date	1840		0 60						0 11						0 42	0 26					0 60
Small, date	1840		0 25						0 05								0 20	0 15			0 25
	1841								0 05									0 15			0 15
Large, date	1842								0 05									0 15			0 15
Small, date	1842		0 25					0 56	0 25	0 20							0 55				0 56
	1843	0 12	0 20					0 56	0 11	0 20						0 08	0 28	0 15			0 56
	1844		0 20		0 80				0 08	0 10						0 08		0 15			0 80
	1845		0 15						0 11		0 06			0 12		0 08	0 20				0 20
	1846								0 11							0 08					0 11
	1847		0 20				0 28	0 28	0 18					0 10		0 08					0 28
	1848		0 20	0 12			0 28		0 25							0 08	0 88				0 88
	1849		0 20				0 28		0 16					0 10		0 08					0 28
	1850		0 20				0 28		0 16					0 10		0 08					0 28
	1851						0 28		0 11							0 08					0 28
	1852		0 20				0 28		0 11							0 08					0 28
	1853								0 11							0 08					0 11
	1854								0 11							0 08					0 11
	1855								0 11							0 08					0 11
	1856								0 11							0 08					0 11
Nickel,	1856		1 00						0 51		0 66					1 81			2 00		2 00
Nickel,	1857																				0 01
Cop., large, d'e	1857								0 05							0 08					0 08
Do. small, d'e	1857								0 05							0 08					0 08
Nickel,	1858												0 10								0 10

2. The bids at the 1858 Cogan sale.

number was issued on May 24, 1866. The Society would guarantee publication for one year at a cost to members of three dollars a year. All publication expenses would be made good by the members. That first year the journal lost $200 and members were assessed to make up the difference. In 1868 Levick became the business editor and wrote a report on the difficulties in publishing the journal. Because of his report the members decided that the president, Charles Anthon, would write to other numismatic societies about an annual rotation of the job of editing and publishing the journal (Adelson 1958, 62). By 1870 negotiations with the Boston Numismatic Society were successfully completed and they agreed to publish the journal for the next year. After his term as treasurer Levick was never as active in the Society as he had been prior to 1874.

A Table

The first mention of the study of 1793 cents appeared in the *AJN* issue of June 1868. The minutes of a regular meeting of the Society, on May 14, stated that Levick had read from a tabular statement that he had prepared that contained the sales, varieties, prices realized, and buyers names. "A Table" was published in the October issue (fig. 3). The 20 principal sales all occurred in New York City or Philadelphia and had cents from the finest collections in the country, starting with the A. C. Kline sale in 1855 and ending with the famous Mickley sale of 1867. This was the first systematic survey of coin price statistics.

He studied over 200 catalogues and excluded those 1793 cents that he thought were too ordinary to note (Levick 1868a). The pieces which were too ordinary he determined by their low prices. Before 1855 he could find only one lot with a 1793. That was in the Roper sale of February 1851, and since it only realized ten cents he thought that its condition must be poor. (Ammi Brown, in a letter to Levick that was published in the May 1869 *AJN*, wrote "The cent of '93 in Roper's Sale 1851, was bought by me. It was as fine as when struck, and probably had never been circulated. At that time but little interest was felt in American coinage, and this piece was knocked down to me for my first bid of 10 cents.")

Levick used the Kline sale as his starting point since it had one lot that consisted of four types of 1793s. It sold to a Mr. Burtiss of New York City for $3.20 or an average of eighty cents each. The second was the Cogan sale of November 1858. Next were the Foote and Gratz sales

A TABLE,

SHOWING THE PRICES PAID FOR THE FIVE TYPES OF THE 1793 CENT, OF THE UNITED STATES COINAGE, SELECTED FROM TWENTY OF THE PRINCIPAL COIN-SALES IN THE COUNTRY, FROM 1855 TO 1868.

COMPILED BY J. N. T. LEVICK.

DATES OF SALES.	OWNERSHIP.	LINK "AMERI."	LINK "AMERICA."	WREATH, VINE AND BARS ON EDGE.	WREATH, LETTERED, OR "HUNDRED FOR A DOLLAR," ON EDGE.	LIBERTY-CAP.	Total number of pieces of each sale.	Total of each sale.	Average of each sale.	Highest priced Cent of each sale, with variety and purchaser.
1855 June 12	Kline, Jno. W., Phila. (known as the A. C. Kline Sale).	80 Burtiss.	80 Burtiss.	80 Burtiss.	80 Burtiss.		4	3 20	80	80 Burtiss.
1858 Nov. 1	Cogan, Edw., Private Biddings.		12 60 S. Gratz.		5 13 W. C. Tripler,	7 25 Jos. J. Mickley,	3	24 98	8 33	Link "America," 12 60 Simon Gratz.
1859 Mar. 7	Foote, Chas. B., Phila.	1 50	4 75 W. J. Jenks.	8 50 W. J. Jenks.	2 25	5 00	5	22 00	4 40	Wreath, Bars, 8 50 W. J. Jenks.
May 21	Gratz, Simon, Phila.	10 00 J. N. T. Levick.	15 00 W. J. Jenks.	11 00 W. J. Jenks.	6 00 Smith, Phila.	6 00 Emil Cauffman,	5	48 00	9 60	Link "America," 15 00 Wm. J. Jenks.
Dec. 10	Levick, J. N. T. Phila.	10 25 V. E. Evers.	4 00 H. N. Rust.	10 00 A. S. Taylor.	5 50 J. K. Wiggin,	10 50 Jno. K. Wiggin,	5	40 25	8 05	Lib. Cap, 10 50 Jno. K. Wiggin.
1860 May 21	Cogan, Edw., Phila.	4 50 Danl. Bertsch.	4 50 Danl. Bertsch.	9 00 N. Sleeper.	4 00 Barnard,	4 00 Bringhurst,	5	26 00	5 20	Wreath, Bars, 9 00 N. Sleeper.
Oct. 18	" " "	5 25 A. S. Robinson.	9 25 A. S. Robinson.	12 50 A. S. Robinson.	6 25 A. S. Robinson,	17 50 Francis S. Hoffman,	5	49 75	9 95	Lib. Cap, 17 50 Francis S. Hoffman.
1862 Mar. 25	Wiggin, Jno. K. by E. Cogan.	7 25 J. P. Leavitt.	4 50 Geo. F. Seavey.	5 88 Wagner.	7 25 Dr. Aug. Shurtleff,	12 75 Dr. Aug. Shurtleff.	6	44 88	7 48	Lib. Cap, 12 75 Dr. Shurtleff.
				7 25 Brechemann.						
May 26	Lilliendahl, W. A., New York.	7 00 Davidson.	24 50 J. P. Leavitt.	3 50 Jos. Zanoni.	6 50 Jos. Zanoni,	16 50 J. Zanoni,	5	58 00	11 60	Link "America," 24 50 J. P. Leavitt.
Nov. 11	Finotti, Rev. Jos. M., W. E. W. 1st S. A. Sale.	15 00 Ed. Cogan.	4 25 Marshall.	6 00 Jno. K. Wiggin.	4 00 Ed. Cogan,	11 00 Jno. K. Wiggin,	5	40 25	8 05	Link "Ameri," 15 00 Ed. Cogan.
1863 Jan. 19	Haines, Benj., Elizabeth, N. J.	5 00 J. K. Wiggin.	16 00 A. S. Robinson.	5 25 Edw. Cogan.	7 75 Ed. Cogan,	6 75 Robt. B. Chambers,	5	40 75	8 15	Link "America," 16 00 A. S. Robinson.
April 28	Woodward, W. E., 2nd Semi-An. Sale.	7 00 C. Lightbody.	20 00 G. M. Parsons.	10 00 G. M. Parsons.		10 00 W. H. Strobridge,	6	68 25	11 37	Link "America," 20 00 G. M. Parsons.
			11 00 Danl. Bertsch.							
			10 25 Danl. Bertsch.							
Sept. 15	Leavitt, J. P.	11 00 W. S. Appleton.	16 00 J. N. T. Levick.	2 87 Jno. Bailey.	4 00 W. E. Woodward,	30 00 W. S. Appleton,	5	63 87	12 77	Lib. Cap, 30 00 W. S. Appleton.
" 22	Seavey, Geo. F. (Duplicates).	3 75 J. Bailey.	31 00 J. N. T. Levick.	5 00 Edw. Groh.	4 50	10 00	5	54 25	10 85	Link "America," 31 00 J. N. T. Levick.
1864 May 17	McCoy, Jno. F.	18 50 J. Zanoni.	15 00 Dr. Edwards.	26 50 Jos. Zanoni.	12 00 J. N. T. Levick,	25 00 Colin Lightbody,	5	97 00	19 40	Wreath, Bars, 26 50 Jos. Zanoni.
Oct. 18	Woodward, W. E., 5th S. A. Sale.	3 25 Marshall.	27 00 J. Zanoni.		9 00 J. L. Hodge,	14 00 J. N. T. Levick,	7	94 25	13 46	Link "America," 27 00 Jos. Zanoni.
			11 00 Jno. Bailey.	22 00 Colin Lightbody.	8 00 J. L. Hodge,					
1865 Mar. 20	Woodward, W. E., 6th Semi-An. Sale.	5 00 Jenks.	7 75 R. B. Chambers.	15 00 Edw. Cogan.	8 50 Edw. Worthington,	5 00 Burt,	6	65 25	10 87	Wreath, Bars, 24 00 Jos. Reakirt.
				24 00 Joseph Reakirt.						
June 29	Cogan, Edw.	18 50			1 38	1 75				
1866 Dec. 6	Lightbody, Colin.	8 00 Col. M. I. Cohen.	23 00 Mort. L. Mackenzie.	20 00 Thos. Cleneay.	4 00 L. Bayard Smith,	40 00 Thos. Cleneay,	3	21 63	7 21	Link "Ameri," 18 50
				15 00 M. L. Mackenzie.						
1867 Oct. 28	Mickley, Jos. J.	110 00 M. L. Mackenzie.	23 00 Col. M. I. Cohen.	31 00 A. V. Jencks.	28 00 L. Bayard Smith,	55 00 L. Bayard Smith,	6	110 00	18 33	Liberty Cap, 40 00 Thos. Cleneay.
" "	" "	11 25 Col. M. I. Cohen.	22 00 J. H. Applegate, Jr.	17 00 Col. M. I. Cohen.	17 50 E. J. Farmer,	37 50 Rich'd B. Winsor,	13	389 25	29 94	Link "Ameri," 110 00 Mort. L. Mackenzie.
" "	" "	" "	12 00 S. S. Crosby.	13 50 Morris.						
" "	" "	" "		12 50 S. S. Crosby.						
Totals of 20 sales for each variety.		$262 80 Total for 20 pieces.	$328 15 Total for 24 pieces.	$293 05 Total for 24 pieces.	$152 31 Total for 21 pieces.	$325 50 Total for 20 pieces.	109 pieces for $1,361 81		$215 81	$469 15 for 20 cents.
Highest priced piece of the 20 sales for each variety.		$110 00 Purchased by M. L. Mackenzie.	$31 00 Purchased by J. N. T. Levick.	$31 00 Purchased by A. V. Jencks.	$28 00 Purchased by L. Bayard Smith.	$55 00 Purchased by L. Bayard Smith.	Averaging $12 49 each.		Averaging $10 79	Average, $23 46 each.

RECAPITULATION.

20	Link "Ameri's"	realized a total of	$262 80	averaging	$13 14
24	" "America's"	" "	328 15	"	13 67
24	Wreaths, Vine and Bars edge	" "	293 05	"	12 21
21	" Lettered edge	" "	152 31	"	7 25
20	Liberty Caps	" "	325 50	"	16 28
109	Cents of 1793	" "	$1,361 81	"	$12 49

This shows us that from 20 Sales, 109 Cents of '93, brought the sum of one hundred and thirty-six thousand one hundred and eighty-one (136,181) cents. The average of the Liberty Cap Cent is the highest, and that of the Link "America" next, and so on.

			PURCHASERS.
1	Link "Ameri."	$110 00	Mortimer L. Mackenzie.
1	" "America,"	31 00	Jos. N. T. Levick.
1	Wreath, Vine and Bars edge,	31 00	A. V. Jencks.
1	" Lettered edge,	28 00	L. Bayard Smith.
1	Lib. Cap,	55 00	L. Bayard Smith.
5		$255 00	

Five distinct types or a set brought the above amount, an average of fifty-one dollars each.

Below we give the highest average of ten Sales selected from the above.

NUMBER OF PIECES.						
13 cents.	J. J. Mickley's Coll.,	Oct. 28, 1867,	389 25	averaging	$29 94
5 "	Jno. F. McCoy's Coll.	May 17, 1864,	97 00	"	19 40
6 "	Colin Lightbody's Coll.,	Dec. 6, 1866,	110 00	"	18 33
7 "	Woodward's 5th S. A. Sale,	Oct. 18, 1864,	94 25	"	13 46
5 "	J. P. Leavitt's Coll.,	Sept. 15, 1863,	63 87	"	12 77
5 "	W. A. Lilliendahl's Coll.,	May 26, 1862,	58 00	"	11 60
6 "	Woodward's 2d S. A. Sale,	April 18, 1863,	68 25	"	11 37
6 "	" 6th "	M'ch 20, 1865,	63 25	"	10 87
5 "	G. F. Seavey's (Duplicates),	Sept. 22, 1863,	54 25	"	10 85
5 "	Edw. Cogan,	Oct. 18, 1860,	49 75	"	9 95
63	'93's brought the sum of		$1,049 87	"	$16 66

From ten Sales 63 U. S. Cents of '93 sold for one hundred and four thousand nine hundred and eighty-seven (1,049 87) cents.

3. Levick's *A Table.*

in 1859. Cogan sold both collections in his store and manuscripts were issued after each sale with the prices realized written in. The sale of Levick's collection in December 1859 (fifth on "A Table") was Cogan's first conventional sale catalogue.

According to Levick the five types of 1793 cents were - Link Ameri (Sheldon 1), Link America (S-2, 3, 4), Wreath, Vines & Bars On Edge (S-5, 6, 8, 9, 10, 11A), Wreath, Lettered Edge (S-11B, C), and Liberty Cap (S-13-16). (The S-7 and the S-12 had not yet been discovered.) The 109 cents listed in "A Table" realized a total of $ 1,361.81 for an average of $12.49 each. The highest price paid for a 1793 cent was the $110 that M.L. Mackenzie paid for the Mickley Ameri which was exactly twice what the next highest coin brought.

The Project

In that same October issue Levick wrote that his next project was to furnish a Photographic Plate of Types and Varieties of the Cents of 1793, to be accompanied by detailed descriptions. He solicited subscribers to the *AJN* to furnish rubbings or copper foil impressions of any 1793s they possessed or the cents themselves for a short time. The Society would guarantee the return of the coins. Levick was underwhelmed by the total of three responses he received. Consequently he had to write individually to each well known collector, and anyone else he had heard of who possessed '93s. Many times it took more than one letter to get his point across. Some collectors didn't think their pieces were fine enough, but Levick wanted to see all their '93s because he wanted to know of every existing variety. He wanted to make the photographs as complete as possible by showing every variety in the best possible condition.

It is probable that Ebenezer Mason read this and decided to beat Levick to the punch by publishing his own study of 1793 cents starting in the December issue of his *Coin and Stamp Magazine*. From December 1868 to August 1869 he attempted to describe the varieties of 1793 cents. The difference between Mason's effort and Levick's was Mason's use of rubbings to describe the cents while Levick used the actual coins (Mason 1868-69). Mason listed three chains, eight wreaths and three liberty caps. Only eleven of his descriptions can be recognized today. He used no plates or drawings to help with those descriptions.

The ANS Library has Levick's Book of Rubbings of 1793 Cents. This book is a diary of the project. Levick made obverse and reverse

rubbings of the finest varieties submitted to him. He included detailed descriptions of each variety, the name of each collector, and the date he received the coins. An entry from page 24:

Nov 18 /68
Geo F Seav[e]y sent me some of his 93's.
No. 2 America - ordinary
No. 1 splendid
Nos. 4 & 5 Both *gems* of the 1st water
His 1, 4, 5 are no better anywhere

Levick used the reverse of Seavey's number one and the obverses of his numbers four and five for the plate. An interesting note appears on page 34 about an Ameri submitted by Robert Hewitt. "The Hewitt Ameri cent I have concluded since the observation made by Crosby that the piece is tooled and altered to an Ameri from an America which can be seen by examination with a strong glass." A rubbing of this coin is on page 19. Apparently Crosby did not agree that this coin was an alteration because he included it in his 1897 monograph as variety 3-B. George Clapp wrote that the *CA* in America had been carefully milled off and a copper pin inserted as a period after the *I* (Clapp 1942). This coin is in the ANS collection.

In the February 1869 *American Journal of Numismatics,* Levick wrote that he had not anticipated the expense, labor and difficulties in producing the plate. He begged the indulgence of the subscribers and promised to have a plate, worthy of their patience, ready for the last number in volume three (April issue). He stated that the photographs would cost more than they thought, and the journal containing them would only be delivered to those members who have paid their subscriptions. The photographs would also be sold by Cogan in his store at $1.00 a pair. These photographs would be desirable for illustrating coin catalogues of past or future sales, and it is not likely that such another set of 1793 cents could be brought together again.

Levick also wrote that it was remarkable how many collectors had been hoarding counterfeits until they were informed by him (Levick 1869a). Most were Smith Counterfeits - engraved copies of 1793 cents made from 1794 cents (fig. 4). Smith of Ann Street was known to have operated in New York City in the early 1860s. Levick had intended to make photographs of these counterfeits to show the general style of workmanship, and to aid collectors in distinguishing the difference between the real and the fake, but he did not. Crosby did include photographs of the Smith Counterfeits in his 1897 monograph.

4. Cent tooled by Smith of Ann Street.

In the March issue Levick thanks Crosby for furnishing him with minute descriptions of all the varieties that will accompany the plate. He also thanks him for pointing out different varieties, detecting counterfeits, and supplying some of the specimens on the plate. It is here that Levick gives his reason for this project. While doing his research for "A Table" he discovered that the same piece may have been described in a half dozen ways by as many cataloguers, who thus gave the impression that there are as many varieties. In some cases he found the same variety appearing several times in the same catalogue, each time described differently.

W. Elliot Woodward had catalogued and sold some of the best collections in the country - Mickley, McCoy, Colburn - men who collected 1793 cents by variety, yet Levick found it impossible to discover differences in the pieces by referring to his catalogues. He intended that the purpose of this project would be that a variety could be recognized by its number or letter. He wanted every cataloguer to adopt one way of describing a piece, let it be known by a certain title, so all collectors may recognize it at once (Levick 1869b). So it was Levick's idea that was implemented by Crosby in the text that accompanied the plate.

Collector Thomas Cleneay of Ohio wrote a letter that appeared in the September issue of *AJN*:

> I'm very pleased with the photographic plate containing the varieties of 1793 cents...it will be of service to both dealers and collectors...the descriptions that accompany the plate will afford all the aid that one will need to determine varieties of 93's. Now, if you can just get the dealers to adopt your plate and descriptions

> as a means of reference when making out catalogues it will be something gained.

He also wrote,

> The readers of the Journal must compliment Mr. Crosby for the brief and faithful manner in which he performed the part assigned to him of describing the various pieces illustrated on the plate...his descriptions are minute, accurate, and complete.

The first cataloguer to use Crosby numbers was Edward Cogan in February 1871, when he sold Pennsylvania ex-Governor Packer's collection. From this point on if the consignor collected 1793 cents by variety, and used Crosby's designations, Cogan would include them in his catalogue. Woodward was the next cataloguer to use Crosby numbers and by the end of the century all major dealers, except Frossard, used them.

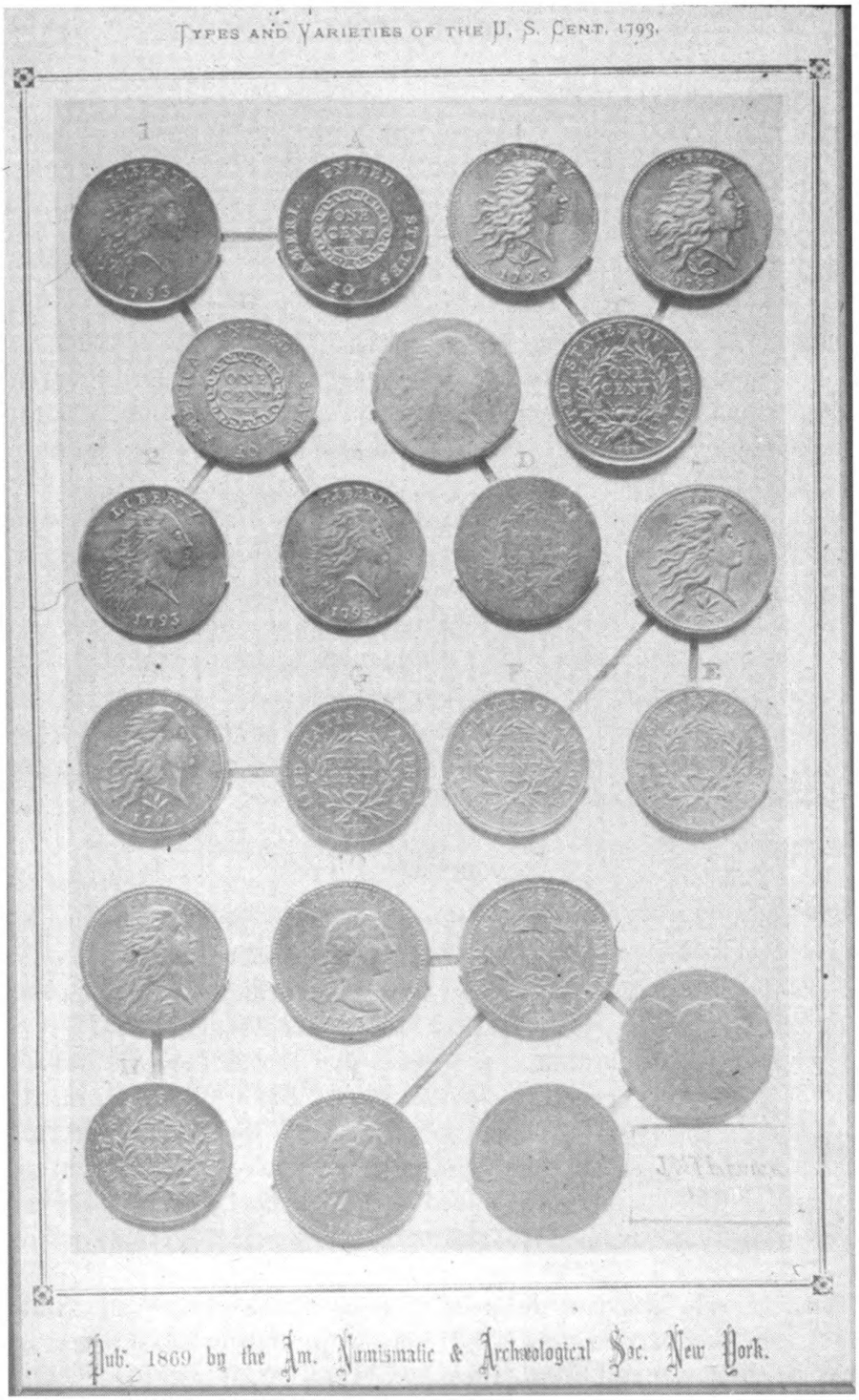
A strange catalogue was John Haseltine's sale of the Crosby collection in 1883. There were 15 different varieties among Crosby's 1793 cents. It had the discovery specimen of the S-15, which appeared on the plate as 12-K, as well as the discovery S-7. What made it so unusual was the fact that Haseltine did not use Crosby's designations to describe Crosby's own 1793 cents. Instead he used Frossard numbers. Frossard's monograph was published in 1879 and encompassed the entire large cent series from 1793 to 1857. He did use plates, but those plates and his descriptions did not come close to matching the Levick/Crosby effort.

The Plate

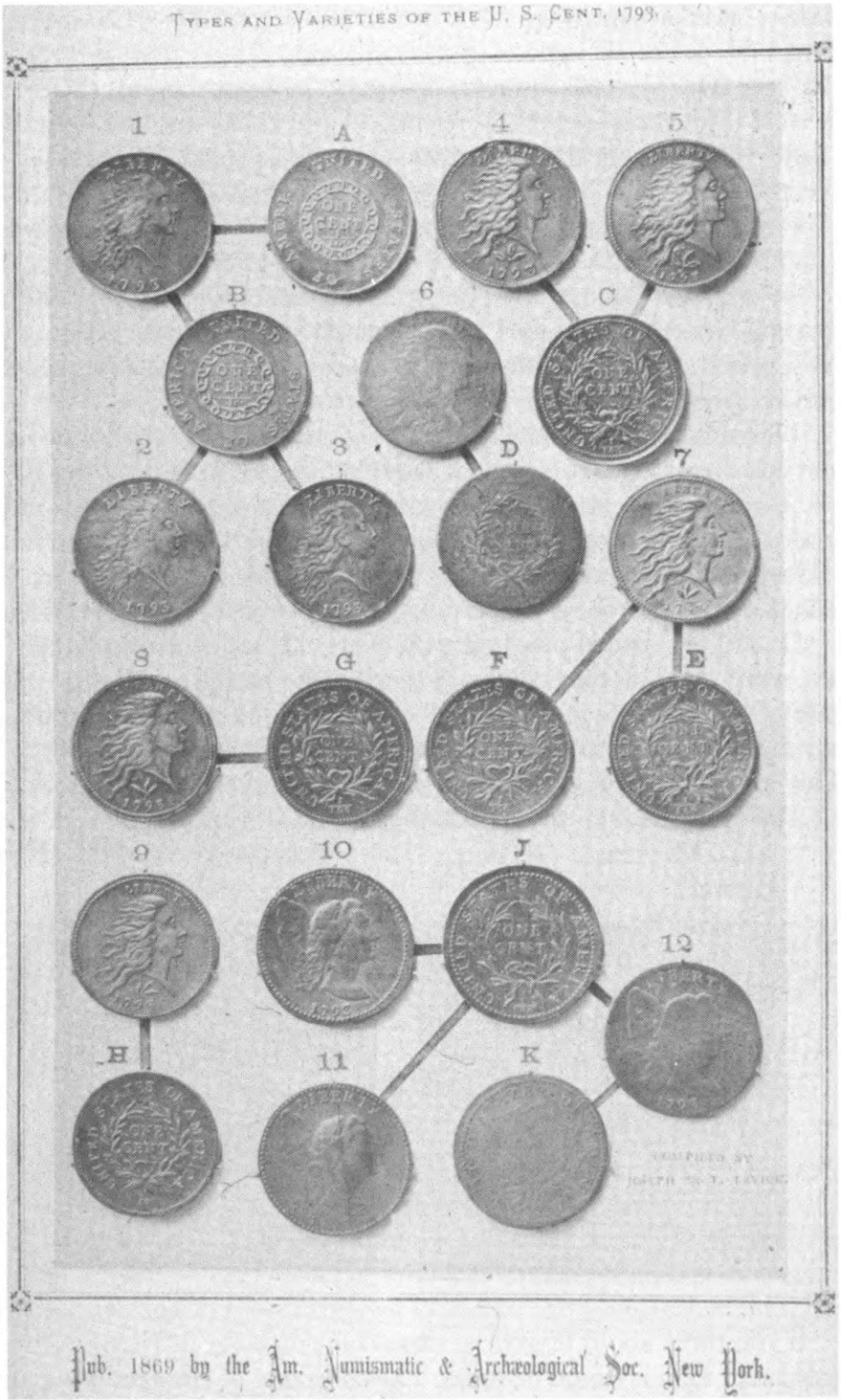
Levick's Plate of 1793 cents is arguably the most famous photographic plate in American numismatics. When you consider that photography was less than 20 years old the quality is amazing. Add to that the quality of the coins and you have a work that has not been matched since.

The misconception about the plate is that Levick took the photograph. He did not. Levick was responsible for the arrangement of the coins laid on pin points attached to a board. He wrote that collectors need not have fear of improper handling of their pieces, such as getting scratched, tarnished, or getting mixed up with pieces belonging to other collectors because the operator (photographer) would not be allowed to handle the coins (Levick 1869b).

There are at least two different versions of the plate (Van Zandt 1994). The first version has "J.N.T. Levick" printed in block letters in a box in the lower right corner, under obverse 12. It also has "1868"



5. The Levick plate - first version.



6. The Levick plate - second version.

under Levick's name (fig. 5). The second version has "Compiled by Joseph N. T. Levick" typeset in the same spot, but without the box and the year (fig. 6). The coins are the same in both versions. There are minute differences in the positioning of the coins, and the lighting is slightly different. In the second version each coin casts a shadow from three to six o'clock. In the first version the shadow is from four to eight o'clock which means the light came directly from the top of the board. I think that the only significance that can be attached to making different versions was that the photographer was experimenting with the lighting until he produced a photograph that satisfied Levick. The change in the lighting of the second version provided a sharper contrast between the coins and the background of the board.

That this version was the final one, I think can be proven by the name and address of the photographer that is impressed at the bottom of the plate, between obverse 11 and reverse K. His name is Rockwood and his studio was located at 339 Broadway in New York City. Levick's name is also typed at the bottom instead of being hand printed as on the first version. I believe that these would only be done on the finished product.

Due to the cost of producing the plates Levick probably decided to use every plate that was made to send to the members. The membership of the A.N.A.S. in April 1869 consisted of 42 regular members, 47 corresponding members, and 11 honorary members (Roll 1870). This adds up to 100, which is thought to be the number of plates produced.

The proprietors of the cents represented in the plate:

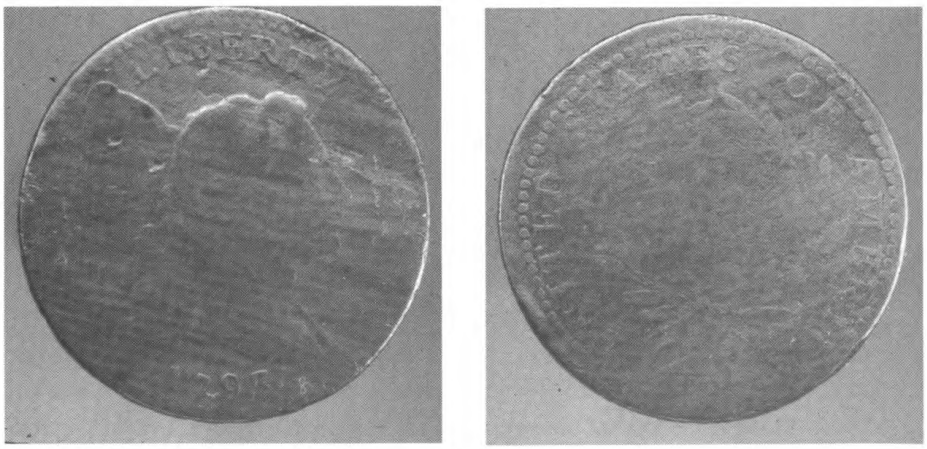
M.L. Mackenzie - 6 coins
George Seavey - 4
S.S. Crosby - 3
Richard Winsor - 2
Bayard Smith - 2
Col. M.I. Cohen - 2
Thomas Cleneay - 1

Levick included these names with the variety that each person supplied at the end of Crosby's descriptions. Also included were names of a few others whose pieces were not used, but they were quite equal of those photographed. This list of owners attached to the finest known varieties of 1793 cents became the first Condition Census. Levick considered ownership of a coin to be an important selling point, and he believed that the pedigree enhanced the appeal of a coin as well as its value.

If you think about it, getting these coins together in 1868 was probably easier than it would be today. The collecting of large cents was only

ten years old, the collector base was very small, and most collectors lived in the northeast part of the country. Mackenzie and Smith lived in New York City, Crosby and Seavey in Boston, Winsor in Providence, Cohen in Baltimore, and Cleneay in Cincinnati. All except Seavey and Winsor were members of the A.N.A.S. and Crosby was probably responsible for bringing in those two New Englanders. If an attempt was made to get the same 20 coins together today you would probably have to deal with 20 different owners scattered around the country. (Del Bland says he can trace the current owners of all but two of the coins on the plate.)

The plate consists of 12 obverses and 10 reverses from 20 coins. There are two coins on the plate that were unique in 1869. The Strawberry Leaf, 6-D, is still unique today. The other is the 12-K (S-15) (fig. 7). Only 10 more examples of this variety have been discovered since. Levick writes that they could not do better in regard to these, but he proposed if better examples were discovered to have them photographed and paste the photos over those now on the plate (Crosby 1869). He also wrote that if some unknown varieties turned up after publication of the plate he would be obliged to correct the original plates by these additions. However this never happened. No plates are known with photos pasted over the originals. In today's terms the plate consists of 14 Sheldon varieties and one Non-Collectible (the Strawberry Leaf). So Levick/Crosby missed only two Sheldon varieties, S-7 and S-12. Crosby discovered the S-12 (a marriage of obverse 10 and reverse K) in 1870 and the S-7 (a new obverse married to the C reverse) in 1879. Both are R6 varieties today.



7. The Levick plate coin of S-15.

The one thing that bothered me about the plate was how there could be a photograph of both the obverse and reverse of a unique coin. I believe that the only way that could happen was to make an electrotype of that coin and put it on the board next to the original, with the electro showing one side and the original coin showing the other. In researching Levick, I found that the last major auction of one of his collections, by Woodward in May of 1884, contained 21 electros of 1793 cents (lots 803-823). Woodward wrote "The following are not only electrotype copies of the very finest procurable examples of the cents of the date, but they possess a historic importance, being generally copied from the identical specimens from which Mr. Levick prepared his plate, and Mr. Crosby wrote his article on the United States Cents of 1793 which appears in the American Journal of Numismatics for April, 1869... The copies themselves are very fine, and are, I suppose the work of Mr. Crosby" (Woodward 1884, 38). Levick makes several references in his Book of Rubbings to Crosby making copies of the cents. The ANS collection has an electrotype of the 6-D (fig. 8). Whether this is the same electrotype that is used on the plate is difficult to tell.

8. Electrotype of the strawberry leaf cent.

As for the 12-K (S-15), I believe that the reverse K on the plate is the actual coin, while the obverse 12 is the electro. This is due to some carbon spots that are on the obverse of the coin that do not appear on the obverse of the coin on the plate. (This coin is in my collection and is the genesis for my interest in Levick and the plate).

Later Years

Curiously, after initiating the study of large cents, Levick never published anything else about the series. When Crosby's monograph on the Cents of 1793 was published in the *AJN* beginning in 1896, Levick took no part in it. The three plates that were used did not have the same quality as the 1869 plate, but Crosby had a much easier time putting the whole thing together since almost all the cents on these plates belonged to Dr. Thomas Hall of Boston (Crosby 1897, 3). Levick's third and last published work was a listing of 56 different varieties of Hard Times Tokens, from his collection, that appeared in the April 1870 issue of the *AJN*.

In a letter to Thomas Elder's monthly magazine in June of 1907, Levick writes that he had been ordered by his doctor to divorce himself from all his hobbies due to his poor health. In two Elder sales, October 1907 and February 1908, Levick sells his remaining numismatic material. In his last letter to the numismatic world that Elder published in 1908, Levick wrote "Some day there will be a grand housekeeping and the junk man and the scavenger will have a cinch shoveling all my gatherings for the last 50 years...a hogshead of entire embossed envelopes, car and ferry tickets, 200,000 postcards with stamps attached, engravings, philatelic literature, numismatic literature, coins and stamps, etc. There are books, books, books, from one end of the house to the other. I want the numismatic, philatelic, and curio world to know that I have to throw up the sponge and be counted out."

Why is it that Levick never got the recognition that Sylvester Crosby received? I believe that he was just as good a numismatic scholar as Crosby, but he did not pursue it for the length of time that Crosby did. Like a nova, Levick burned brightest in the late 1860s, but after 1870 the fire dimmed and he devoted his efforts to his many collections instead of research. He died in October 1908 at the age of 80. His obituary appeared in volume 21 of *The Numismatist*, but not in the *AJN*, for whose very existence he was responsible.

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Aspects of the Copper Coinage, 1793-1796

R.W. Julian

Coinage of the Americas Conference
at the American Numismatic Society, New York

November 9, 1996

1. Engravers

The question of the early Philadelphia Mint engravers is a thorny one, but which yields important information through a careful study of the coins and documents. While the 1792 engraving work is outside the scope of this discussion, dies for the Chain cent were almost certainly executed between mid-January and early March 1793. Congress had reduced the actual weight of the cent and half cent on January 14, 1793, due to increased copper prices; until the actual weight was determined, dies could not be completed. Preparatory work, such as deciding the designs, would of course have already been done.

We are certain that Chief Coiner Henry Voight is the person responsible for the Chain cent dies. (Henry Voight is also known as Henry Voigt. The chief coiner spelled his name as Voigt, but others anglicized it, as is done here.) In a report to Congress of February 9, 1795, the statement is made that "It was also a considerable time before an engraver could be engaged, during which, the chief coiner was obliged to make the dies for himself..." (Am. St. P.: Fin. 1:353-355).

The phrase "considerable time" thus becomes a key point. We know that the Chain cent coinage extended from late February until March 12, a period of about two weeks of intensive work (National Archives, RG 104: Treasurer's Receipt). This hardly qualifies as a considerable length of time although, as noted, actual engraving work had probably begun by the middle of January.

It is known that the 1793 Wreath cent coinage began on April 4, a mere 23 days after the end of the Chain mintage (National Archives, RG 104: Personnel Record). Considering that it would have taken a few days to make a decision on the new design, this is a very tight period of time. Most of the wreath cents were struck by the end of June, although some were delivered in July.

Both Adam Eckfeldt and Joseph Wright have been suggested as primary engravers of the Wreath cent dies, but both must be rejected. The easiest to dispose of is Wright because the new head of Liberty is hardly up to his known skill and artistry.

Eckfeldt, despite his later admirers, was not exactly a "Man for All Seasons" in the early mint. It is true that he was a reasonably skilled blacksmith and general mechanic but until January 1796 was not he even an official employee of the Mint. He did contract blacksmithing, die hardening, and similar work prior to his regular employment as assistant coiner in charge of copper.

The Wreath cent dies can also be ascribed to Voight because of the February 1795 report. If we assume he was still doing engraving work in June 1793 on this design, then the period of January through June nicely fits the phrase "considerable time." It may be, of course, that die work for the Wreath cent actually ceased by the end of May, although minting continued for some time. Furthermore, the 1795 report clearly states that the chief coiner executed the dies until an engraver was engaged and there is very good reason to believe that Joseph Wright did not become engraver until after July 1.

The half cent planchets, even to the point of being edge-lettered, were ready by May 15 (National Archives, RG 104: Personnel Record). There is also a distinct artistic relationship between the reverses of the Wreath cent and the half cent. We find the same cluttered design, down to the excess berries littering the field (figs. 1-2).

1. The Wreath cent of 1793 (Crosby 6-F).

2. The half cent of 1793 (Cohen 1, Breen 1).

One can then reasonably suggest that the first half cent reverse die was actually engraved in late April or early May in anticipation of the half cent coinage. The obverse was not done at this time because the government had finally decided that Voight's limited engraving skills were no longer wanted. It is possible, of course, that Voight had cut a half cent obverse, but that it was rejected and no specimen survives from any that might have been struck.

The half cent dies of 1793 are sometimes credited to Eckfeldt, but this cannot be correct, at least for the obverse. It was not until July 18 that this denomination was first coined (National Archives, RG 104: Personnel Record). The delay can be explained only by assuming that Joseph Wright did the necessary die work when he arrived at the Mint in early July 1793.

It is of course possible that Eckfeldt helped prepare the Wreath cent dies as well as those for the half cent. He might, for example, have punched in the lettering and figures on the obverse and reverse. This sort of help on the cent dies would have freed Voight to spend more time superintending the actual copper coinage operations. In addition, Eckfeldt may have had serious input into the reverse dies for the half cent.

That Voight was the engraver for the first two cent designs has a certain amount of irony connected to it. In his formal application to become the chief coiner, Voight noted he had served in the small German mint of Saxe-Gotha (Washington Papers). While there, according to his own statement, he had learned virtually every facet of coinage operations except one: engraving.

Very little is known about Voight's service in the Saxe-Gotha mint. He was born in Pennsylvania about 1745 so presumably went to Germany to stay with relatives, perhaps in the late 1760s. Recent inquiries to experts on the Saxe-Gotha Mint, however, have turned up no documentary evidence that Voight was ever there.

The quality of the half cent obverse design is so much better than either the Chain or the Wreath cent designs that we are clearly faced with a new engraver. Adam Eckfeldt later claimed that he had executed the designs for the 1793 half cent but either he was overstating his work or the listener misunderstood (Taxay 1966, 71). Again, it should be emphasized, Eckfeldt has to be rejected as the primary engraver for the obverse for the simple reason that he would have become the chief engraver at $1200 per year rather than have to wait until January 1796 to be employed at an annual salary of only $600. He did not come from a wealthy family and the $600 difference was a great sum of money in those days, the equivalent of about two years' wages for a skilled workman.

We now have only Joseph Wright available for the July work and it is known from a later letter that he was in fact the engraver when he died in September (Taxay 1966, 105). Although the necessary documents are now lost, it seems likely that Wright accepted the engraver's

post in July 1793, but did not begin full-time work until after the first of July. At that time officers were paid only at the end of the quarter (June 30 in this case) and there is no record of a payment to Wright on that date.

It is also true that there is no record of payment for the quarter ended September 30 but then Wright died in mid-September. It seems likely in hindsight that his estate was paid his salary from early July through mid-September, but that the Mint was not debited. The reason for this odd financial arrangement is not known but may have been connected in some way with the conditions of employment.

The half cent dies were completed so quickly that it does seem probable that Eckfeldt aided Wright in completing the work. With Joseph Wright free to concentrate on the actual artistic part of the effort and Eckfeldt doing the busy work, the overall die preparation would have gone fairly quickly. Considering that Wright's liberty cap cent reverse is much better than the half cent reverse, it seems therefore probable that Wright had little or nothing to do with the reverse of the smaller coin.

It seems obvious, from a comparison of the obverses of the half cent and liberty cap cent, that the latter is better done. This can be explained by noting that Joseph Wright was getting better with experience.

There is, of course, no question that Wright did the liberty cap cent dies of 1793. The reverse wreath, in particular, is much better done, showing that Eckfeldt had little to do with these dies, except perhaps lettering or figures.

The following schedule of die work, based on the above discussion, will, one hopes, provide a springboard for further thought on this topic:

1) Henry Voight, with perhaps minor input from Adam Eckfeldt, engraves the Chain cent dies in January and February 1793.
2) Voight, with possibly increasing help from Eckfeldt, especially in the lettering, prepares the Wreath cent dies from mid-March through some point in May or June.
3) The three half cent reverses, with work by both Voight and Eckfeldt - but perhaps more by the latter, are prepared in April and May, but not used until mid-July.
4) With the arrival of Joseph Wright in early July 1793, the whole situation changes. Wright prepares the half cent obverse dies, which are paired with much cruder reverses.
5) In July and August 1793 Joseph Wright prepares both obverse and reverse dies for the liberty cap cent coinage of September. All

liberty cap cents, as well as a few half cents, were delivered on September 18, 1793 (National Archives, RG 104: Treasurer's Receipt).

With the death of Joseph Wright about September 12, the government was forced once more to look for an engraver. In November Robert Scot obtained the coveted office and was to serve faithfully until his death in late 1823. That Eckfeldt did not obtain this post after the death of Wright speaks for itself.

It is of interest to note that there were also *minor* engravers working at the Mint. In 1793 Jacob Bay cut all of the letter and figure punches used for the cents and half cents of that year. Bay, however, died in the yellow fever epidemic of 1793 and was replaced by Frederick Geiger, who cut punches for the copper and silver coinages of 1794; the latter, however, seems to have left the Mint service after that year. We tend to concentrate on the artistry of the wreath and the head of Liberty, but those who executed the letter punches were also engravers in a real sense.

Each of the two men had been closely involved with type foundries and the actual cutting of type before coming to the Mint. Geiger is perhaps the more interesting because his passage from Europe was paid for by Benjamin Franklin.

It does not take a major stretch of the imagination to suggest that both Bay and Geiger helped with die preparation. Isaiah Thomas, who wrote an account of printing in America that was published in 1810, may well have had first hand information when he stated that each man was an engraver at the Mint (Thomas [1810] 1970, 30-31).

On June 17, 1794, Frederick Riche was paid $18 for 18 days employment in the engraving department (Philadelphia Mint Warrants, 30, no. 92). He helped prepare the dies, but to what extent is unknown. We do not even know under what conditions he was employed or why he did not stay on. Chief Engraver Scot may have been ill or perhaps simply needed help for a short period of time. That he was not later hired for additional work would seem to indicate, however, that he was not all that skilled.

During 1794 the coinage of silver began and gold was to follow in 1795. This meant added pressure on the engraver and in early January 1795, not November 1794 as reported by Stewart (Philadelphia Mint Warrants, no. 91; Stewart 1924, 93), John Smith Gardner was hired as Scot's assistant. Warrant number 91 is for $121.60 - 76 days work. No

warrant mentioning Gardner was found for 1794, despite Stewart's statement. The assistant engraver helped prepare the working dies for the gold and silver and also created some of the hubs, according to Stewart.

Gardner served throughout 1795 and into 1796, resigning at the end of March. He returned, however, for 50 days' work at the beginning of July 1796, leaving for the second and final time on August 26, for which he received $150 (Philadelphia Mint Warrants, no. 14). Scot was under considerable pressure in the summer of 1796, due to the new draped bust design for the cent as well as preparations for the first quarter eagle coinage. After August 1796 there was no assistant engraver again at the Mint until John Reich in 1807.

Robert Scot has been treated somewhat unfairly over the past few decades by researchers. His skills have been derided but it appears that his work was reasonably competent. If he had been as bad as some claim, then he would have been replaced at the first opportunity and this was not done. Only death removed him from office.

The last engraver to be considered was never an employee of the Mint although he was once offered a job, that of assistant coiner (Philadelphia Mint Letters, February 8, 1796, 50-52; a detailed account of the affair, prepared for Congress). In fact, the job he turned down in late 1795 was taken a few weeks later by Adam Eckfeldt. We are, of course, speaking of John Harper, the former coiner of New Jersey coppers.

In late 1794 New Jersey Congressman Elias Boudinot had been appointed to chair an investigation into the Mint. There had been persistent public complaints that the institution was not making coins quickly enough to fill the needs of the marketplace. During the course of his investigations, Boudinot interviewed John Harper.

The one-time New Jersey coiner pointed out some short-comings of current Mint techniques and was sent by Boudinot to Secretary of State Edmund Randolph, the Cabinet officer responsible for the Mint. Randolph in turn sent Harper to see Mint Director David Rittenhouse. Apparently Harper was treated as a country bumpkin with little knowledge of minting procedures, because he then set out to prove that he knew more than the Mint officers.

To make his point Harper engraved a pair of dies and invited the committee for a demonstration of coining superior to that practiced by the Mint. He struck a number of copper pieces with the committee present. They were so impressed by the work that he was sent back to the

Mint. This time the officers got the point and adopted suggestions advanced by Harper; it is believed that these primarily involved a better method of feeding the planchets into the press.

3. The "Jefferson" cent (the Fewsmith specimen).

There has been general agreement among numismatists for some years that the Harper "coins" are the famous "Jefferson" cents (fig. 3). As this has been questioned occasionally of late it is perhaps best to state the reasons for accepting the Jefferson pieces as being done by Harper.

The principal objection to the Harper attribution was made by David Proskey in 1880 (Proskey 1880, 35). He seemed to think that these pieces were actually counterfeits of about 1803. In opposition to this, the following may be stated:

1) Between 1797 and 1814 the price of copper was so high, due to the Napoleonic Wars then convulsing Europe, that full weight counterfeits on the standard of January 1793, 208 grains for each cent, would have been absolutely pointless. The copper coinage of 1803, however, was on the reduced standard, 168 grains, of December 1795.
2) Harper is known to have cut dies in early 1795 and struck specimens although it is true that Boudinot does not mention the denomination. In a letter of November 4, 1795, however, Harper offered to strike cents on contract which effectively names the denomination he struck earlier (National Archives, RG 104: Harper Letter).
3) The dies were not executed in the Mint as the letters are completely different from those used on regular coinage.
4) Some of the Harper cents are known on lettered-edge planchets, almost certainly obtained at the Mint. That lettered edge planchets would have been prepared by a counterfeiter about 1803 is not worthy of consideration.

2. Presses

There has been speculation about the number and kind of screw presses used by the early Mint for the copper coinage. For a long time it was accepted that Jean Pierre Droz, a Swiss engraver employed at the Paris Mint, had sent over three presses. According to Mint Director James Ross Snowden, supposedly writing from documents no longer in existence, three presses arrived from abroad on September 21, 1793, shortly after the first building was ready for occupancy (Snowden 1860, 99).

Snowden also gives a direct quote from Voight's now-missing first account book in which he indicates that one of the workmen was "trimming [sic] the heavy press" (Snowden 1860, 99). This implies that at least two presses were then on hand.

The report of February 1795 states that three presses were on hand, with a fourth then being readied; this last-named press was first used for silver dollar coinage in early May 1795.

There was no warrant issued for any press or presses purchased in August or September 1792. We do know, however, that David Rittenhouse had the unfortunate habit, at least for present-day researchers, of purchasing expensive items for the Mint out of his own funds (Barton 1813, 389).

That there was at least one press on hand in July 1792 is certain because the first half dismes were struck at that time; its source is unknown, however, as there is no warrant for purchase, and the press may have been on loan from John Harper, whose Philadelphia cellar at Sixth and Cherry Streets was the site of the temporary mint in the spring and summer of 1792.

On August 29, 1792, John Harper (Philadelphia Mint Warrants, no. 7) was paid $217.85 for "cutting-presses, castings." This was copied by Stewart (Stewart 1924, 170) as "cutting, presses, castings." With this correction of Stewart's entry it is unlikely that we are dealing with a coining press, although this is still possible. This same entry may also have confused Snowden.

The Warrant book (Philadelphia Mint Warrants, no. 35) reports that on December 12, 1792, Daniel Dawson was paid for a large screw while two days later Adam Eckfeldt (Philadelphia Mint Warrants, no. 36) was paid $194.85 for unspecified "smith's work." It seems possible that this means a press was built at the time. It also seems likely, if this

assumption is correct, that the Eckfeldt press was used for the first silver coinage in 1794.

If the Eckfeldt press is the correct assumption here, then we may also assume that the press used for the 1792 half disme coinage was in fact borrowed from John Harper and later returned to him. It would appear, on the face of it, that Harper sold no coining presses to the Mint. Neither, it would appear, did Droz.

We find, in the existing Voight account book for 1793, that he paid out of contingency funds on April 8 a small sum for hauling a press from "Mr. Hamilton's" (National Archives, RG 104: Personnel Record). It is unknown if he meant Treasury Secretary Alexander Hamilton by this reference but there is no official payment for any press at this time.

On May 28, 1794, John Rutter & Company was paid $69.06 for iron castings (Philadelphia Mint Warrants, no. 81). In the Stewart book on the early Philadelphia Mint, however, it is stated that this was a press weighing fourteen hundredweight (Stewart 1924, 175). Stewart reports the date as March 25, perhaps a misreading of his source.

On June 3, 1794, Hannah Ogden - presumably the widow or daughter of Matthias Ogden, a New Jersey coiner - was paid $47.44 for a coining press (Philadelphia Mint Warrants, no. 84). The low price for this press would seem to indicate that it was not a large piece of machinery; it is also likely to have been previously well used in the New Jersey copper operations. It is possible that the preceding entry, that for the Rutter Company, actually was payment, in part, for hauling the Ogden press from New Jersey to Philadelphia.

Mint Director David Rittenhouse, in answer to a question from Congress, wrote on November 20, 1794, that a more powerful press was then under construction in order to coin dollars and medals (Am. St. P.: Fin. 1:317). (Many numismatists are aware that the dollars of 1794 were poorly struck because the largest available press did not have sufficient power.)

On December 8, 1794, Robert Fitzgerald was paid $18.67 for "blocks, tackle, thimbles && for the coining press" (Philadelphia Mint Warrants, no. 55). The entry seems to say on the face of it that there was only one press then being used, but this is unlikely. Entries in other fiscal accounts (Philadelphia Mint Journal) for this same date and person merely record a "pulley and tackle" being purchased although Stewart mentions the press.

In late 1794 the Congressional investigation chaired by Elias Boudinot got underway; their report was made on February 7 of the new year. It stated that the Mint had only three presses but also specifically mentioned screws as if to indicate that spares were kept on hand in case of breakage. The February report on presses is somewhat confusing as it also adds a note that the three presses "when complete" would strike eight to twelve thousand coins per day (Am. St. P.: Fin. 1:354). This may refer to the improvements suggested by John Harper, each press being modified appropriately.

Because the Boudinot report was presented on February 7, it becomes especially confusing when we examine Stewart for his report of warrants for February 2, 1795. He shows payment to Samuel Howell and Company for two small presses and one large one; the large press, according to Stewart, weighed one ton, eleven hundredweight, or 3,472 pounds (Stewart 1924, 178). The latter, however, cannot be the large coining press mentioned in the November 20 letter as dollar coinage did not resume until early May 1795 and there is a warrant for a heavy press at that time, also to Howell and Company.

The odd thing about this Stewart entry for February 2, 1795, is that the three existing account books covering 1795, all of which are on display at the present Philadelphia Mint, do not indicate at all under this date that presses were purchased from the Howell company. In fact all three entries merely indicate payment for cuttings, wrought iron, and hauling. (Stewart clearly had access to a ledger no longer available in the Archives.)

Considering all of the above, the following presses were theoretically on hand in February 1795:

1) The press used to strike the half dismes in July 1792,
2)-4) The presses mentioned by Snowden as having arrived from abroad in September 1792,
5) The press constructed by Adam Eckfeldt in December 1792,
6) The press obtained from "Mr. Hamilton" in April 1793,
7) The Rutter press of May 1794,
8) The Ogden press of June 1794, and
9)-11) The presses obtained from Howell & Company in January 1795.

We can all think of scenarios by which one press went bad and was replaced by another or the named presses were in fact planchet cutters.

Until further documents are uncovered, however, this will be pure speculation.

There does seem to be one likely conclusion to be drawn from the above, however: Jean Pierre Droz did not send any coining presses to the United States, despite reports to the contrary (Breen 1954, 4). Had Droz sent presses to America one would expect them to have been of first-class construction and not needing replacement within a few months. We can, however, safely say that three presses were in use during February 1795, the others having broken down or been sold for scrap; just which three, however, is a question not to be solved here.

As a mere opinion, it may be that the cent and half cent coinage of 1793 was struck on either the "heavy" press of September 1792 or the Eckfeldt press of late 1792. Perhaps both were used.

3. Designs on Copper Coinage

Although most collectors are aware that public criticism forced a change of design for the cent in 1793, there has been little real interest in the political or artistic elements involved. The Chain on the Chain cent certainly represented the bond between the states, but beyond that, the new Federal union. There was still considerable opposition to the new government and the coin was meant to proclaim the strength of such unity (fig. 4).

4. The Chain cent of 1793 (Crosby 1-A).

The crude obverse head of Liberty, by Henry Voight, cannot be characterized precisely, but probably derives, directly or indirectly, from the Libertas Americana medal ordered by Benjamin Franklin in Paris during the 1780s to celebrate the peace of 1783 between Britain and the United States. It also, of course, commemorated the American victory.

The public misunderstood the symbolism but one suspects that die-

hard opponents of the new Federal government took particular offense at the Chain motif. The aristocratic Alexander Hamilton was blamed although the artwork was almost certainly the choice of President Washington and Secretary of State Thomas Jefferson; the latter was the cabinet officer responsible for the Mint during 1792 and 1793.

The Wreath cent design was simply a return to patterns of 1792. Voight by now had matured somewhat in his engraving skill and managed to produce a better head of Liberty, though far from outstanding. We know of no criticism of this design, although some must have existed.

The arrival of Joseph Wright as engraver in early July 1793 made a great difference. With the exception of the half cent reverse, which Adam Eckfeldt may have partly engraved in whole or part, the half cent and liberty cap cent dies of 1793 were prepared by Wright (fig. 5).

5. The Liberty cap cent of 1793 (Crosby 12-K).

Although a subjective thought, it would appear that Thomas Jefferson was strongly involved in the new liberty cap cent design. He was a strong advocate of the new French revolutionary government, which had overthrown Louis XVI, and the liberty cap was a symbol of the new regime in Paris. It is perhaps significant that the liberty cap motif does not appear on any new design executed after Jefferson left office in December 1793.

In the summer of 1796 the draped bust design was introduced to the cent (fig. 6). It had first been used in the fall of 1795 on the silver dollar but gradually spread to the other denominations as time permitted. It is quite likely, for example, that John Smith Gardner returned in July 1796 because of the pressure for new cent dies.

It is also worth noting that Elias Boudinot, mint director since late October 1795, was a strong Federalist (and thus anti-French) and would have been more than pleased to remove the liberty cap from the copper coinage.

6. The draped bust cent of 1796 (S-92).

4. The Weight Standards for Copper Coinage

In April 1792, when the basic mint law was enacted by Congress, the weight of the cent was set at 264 grains, the half cent being proportional. By November of that year Director David Rittenhouse had discovered that copper prices were rising and soon the government would have to issue copper coins at a loss. He made this known to Thomas Jefferson, who appealed to Congress to lower the weights. This was done in mid-January 1793 with the cent weight being set at 208 grains. Coinage began in late February on this standard.

The general practice in 1793 and 1794 was to remelt the scrap copper remaining after the planchets had been cut out and then use the new ingots for a fresh coinage. The only trouble with all of this was that the rollers got progressively worse and the chief coiner wanted to save them for the coinage of precious metals. At the end of 1794 due to the pressure of silver coinage, the Mint had simply stopped coining copper.

There was a minor coinage of copper in the fall of 1795, Mint Director Henry William De Saussure and Elias Boudinot reluctantly ordering a small number of cents and half cents made. The public criticism apparently was sufficient that it overcame the problem with the rollers, which of course continued to cause problems.

Boudinot took careful stock of the situation and reported to the Secretary of State on December 3, 1795 that rising copper prices were also a problem (Philadelphia Mint Letters, 38-45; part of this letter was reprinted in Am. St. P.: Fin. 1:357-358, but the part about copper was not used). The President had the authority, under an earlier law, to lower the weight by edict and did so toward the end of the same month. The cent now weighed 168 grains and would remain at this level until 1857, when the copper-nickel cent was introduced.

With the reduced weight, coinage resumed strongly. The rollers were used but by late in 1796 it became common to sell the scrap copper on the open market. The Mint used sheet copper in late 1796 as its primary source. After 1797 the Mint virtually never rolled copper for coinage, preferring to import ready-made planchets from Matthew Boulton in England.

The theory behind the relatively heavy weight of the copper coinage was that it would circulate on its own merit. Too many of the lightweight coppers of the 1780s had been ridiculed by the public and the new government was determined to avoid that problem. It was not, in fact, until 1864 that minor coinage was given legal-tender status.

As a result of the heavy weight, there were few attempts at counterfeiting the copper coinage between 1793 and 1857 and none at all prior to 1815 as is known at present.

Acknowledgements

The material on presses is included as a result of discussions with Craig Sholley. He also provided valuable insight into other matters connected with the question of presses.

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The Strawberry Leaf Cent: A Reappraisal

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Coinage of the Americas Conference at the American Numismatic Society, New York

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The Discovery of the Four Known Examples

Study of the strawberry leaf cent is as old as the study of large cents itself. The first notes about it were made by Joseph N. T. Levick in 1868, who wrote as follows:

> Rich[ard] D. Winsor, Providence, R[hode] I[sland] has 2 '93s both of which I ought to have to discribe [sic] + also to photograph. His broken die Lib[erty] Cap ¢ from the Mickley Coll[ection] is the finest one I ever saw, + the obverse being dif[ferent] variety from that of the perfect die.-
>
> The other variety is more like No. 4 or 6. At the top in the word "Liberty" it resembles No. 4, only the letters or the whole word is not directly over the head as in no. 4.- The R of Liberty is opposite the roll or curlicue [that] is rolled back from the forehead. Under the bust is a sprig of four branch[es] at the end of each is a trefoil or clover leaf. The reverse is similar to No. 6.-
>
> The R in the word "Liberty" is somewhat taller than the rest of the word.-
>
> The trefoils under the bust resemble very much those to be seen on the wreaths of 93s.
>
> The date is almost obliterated so much so as to be indecipherable - in fact the whole is very much worn.
>
> This piece Mr. Winsor purchased of Mr. Meader of Prov[idence] R[hode] I[sland] who took [it] in circulation many years ago.- Paine says in 1845.
>
> Mr. W[insor] says that this 93 is more nearly like the 4 of plate,- the chief distinction however is in the mark under the bust instead of 3 leaves it is a cluster of *four* clover leaves. Mr. Woodward pronounced it the only one he had ever seen of that kind. The planchet is very little smaller than Liberty Cap, quite thick + has bars + vine on edge. (Levick 1868, 25-26)

This specimen has been unique since 1845 and has one of the most lengthy pedigrees of any large cent (listed below).

Paine, who was Levick's source for the information about when the first identifiable owner of the strawberry leaf cent acquired it, is George T. Paine, who became a corresponding member of the American Numismatic Society on March 12, 1868. He lived in Providence, Rhode Island, so he would be in a position to know when Meader acquired the strawberry leaf cent (Roll 1870, 100).

Meader is the grocer John J. Meader of Providence, Rhode Island. John Meader is not listed in the 1840 census of Rhode Island, so he

appears to have arrived in Providence between June 1, 1840 (the 1840 census was taken as of that date [*Genealogical Research* 1983, 36]) and July 20, 1841 (the date of the preface of H. H. Brown's 1841 city directory for Providence, Rhode Island [*Providence Directory* 1841]). The 1841 Providence city directory shows John Meader as a grocer with a store at 66 South Main Street, and his residence at the rear of 55 North Main Street (*Providence Directory* 1841, 116). In the 1843 and 1844 directories Meader has a partnership with Goff, called Meader & Goff, and stores at 62 and 64 South Main Street (*Providence Directory* 1843, 53; *Providence Directory (Moore)* 1844, 63). One directory also gives us his banking connection - the Manufacturer's Bank (*Providence Directory (Brown)* 1844, 123). This must be the Mechanics & Manufacturers Bank of Providence, Rhode Island (Haxby RI-345), founded in 1827, which in 1865 became the Fifth National Bank of Providence (Haxby 1988, 4:2238). By the time of the 1845 directory (preface dated December 1844) Meader has ended his partnership with Goff, and is on his own, as J. Meader & Co. at 64 South Main Street (*Providence Directory* 1845, 79; *Providence Directory* 1846, 83). In 1847 he has shops at 60 and 64 South Main Street (*Providence Directory* 1847, 94). Benjamin Moore's directories for Providence list Meader under the category "West India Goods and Groceries, *Retail,*" which indicates that Meader, like many grocers, made much of his profit from sugar.

A large retail grocer in Providence, Rhode Island, whose harbor was filled with clippers from all over the world, could take an unusual looking copper coin in over the counter and set it aside as a curiosity. Meader certainly kept up his interest in numismatics, because in 1867 he became the first secretary of the Rhode Island Numismatic Association (Transactions 1867, 75). In 1868 he was elected its president (Transactions 1868a, 94).

The first public exhibition of the strawberry leaf cent almost certainly occurred at the meeting of the Rhode Island Numismatic Association held on March 16, 1868. The minutes say:

> The chief attraction of the evening was the exhibition of United States Cents. Nearly every member present showed a complete set, in fine condition. Mr. Winsor's collection deserved especial notice; also President Meader's, which contained seven varieties of the issue of 1793 (Transactions 1868b, 110).

The coin was exhibited again at the meeting held on December 21, 1868, and described with particularity for the first time:

> An interesting feature of this meeting was the exhibition of

> specimens of the 1793 cent. Some very fine pieces were shown by Messrs. Jenks, Gorton, and Winsor. The Liberty Cap (cracked die) and Clover Leaf varieties belonging to the latter gentleman attracted special notice, one for its condition, and the other for its rarity (Transactions 1869, 71).

Meader exhibited no cent varieties whatsoever, although in March he had exhibited seven varieties of 1793. This suggests that some time on or before December 21, 1868, Meader sold his cent collection to Winsor, including the strawberry leaf cent.

In October 1877 David Proskey discovered and catalogued the second variety of strawberry leaf cent, the ONE CENT high variety. This specimen is the finest known strawberry leaf cent. Proskey described it as follows:

> 1793 Wreath Cent. "Stars and stripes" on edge with *three clover leaves and blossom under the bust.* Fair condition, but date and legend perfectly distinct. *Unique,* both obverse and reverse being from a different die to the one described by S. S. Crosby, Esq. (Proskey 1877, lot 201).

This coin was bid up to $77.50 and sold to the coin dealer H. G. Sampson, who was acting for Lorin G. Parmelee. The underbidder on the coin was Joseph Levick, who was acting for Crosby with instructions to pay up to $75 for the cent. We know this from a notation in Levick's hand in one of the ANS copies of the catalogue, which reads, "I bid to 75$ for Crosby." (Levick 1877). The *American Journal of Numismatics* said, "We have received from Mr. Proskey of New York, the following notes of other recent coin sales in that city, for which we desire to express our thanks," and reported the sale of the strawberry leaf cent as follows:

> 1793, wreath cent, with clover leaves under bust, (then supposed to be *unique,*) fair, $77.50. (Coin Sales 1878, 75)

Proskey evidently no longer considered that coin to be unique. The reason was because the dealer Edouard Frossard brought another strawberry leaf cent to the sale to compare it with what became the Parmelee specimen. We know Frossard did this because of the description in the first auction appearance of the Merritt-Haines-Saltus-ANS specimen,

> Head of Liberty, with *three clover leaves* and *one flower* under the bust; the reverse with ONE CENT within wreath. Of this extremely rare variety only three specimens are known; this one, on the whole, equal to the one sold a year ago at Clinton Hall, with which we had occasion to compare it. Barely fair; LIBER-

> TY distinct; 9 and 3 of date weak. (All the preceding 1793 Cents have the bars and leaves on edge.) (Frossard 1879a).

The third strawberry leaf cent, which was the second example of the ONE CENT high variety, which Frossard had found, was sold as part of the George Merritt Collection in 1879, and bought by Ferguson Haines. Ferguson Haines attempted to resell it at a profit, but the coin never achieved his reserve; it was finally sold after his death in December 1894. This was the very coin which caused Lyman Haines Low to call Edouard Frossard a liar and the two ended up rolling about on the floor, kicking each other, and H. P. Smith lost a diamond pin while trying to separate the two (Adams 1911a; Steigerwalt 1911; Adams 1911b; Carlson 1978). The coin was donated to the American Numismatic Society on May 16, 1906, by John Sanford Saltus as part of his collection of cents and half cents. The collection of cents numbered 124 and was described in the accession book as "complete, including varieties." The ANS accession number is 1906.99.

William Rabin, a dealer in Philadelphia, advertised in the *Numismatist* in September 1941 a fourth example:

> The Rarest of All U.S. Cents
> 1793
> STRAWBERRY LEAF
> THE PRICE IS $2,500.00
> WM. RABIN
> 905 Filbert St., Philadelphia, Pa (Rabin 1941).

This was considered to be a ludicrously high price at the time.

This coin may very well be the one which was first reported in the *Numismatist* in December 1933, in an article about unusual coins discovered while going over banks' holdings during the bank holiday and after the gold turn-in order:

> One of the "strawberry sprig" pennies has turned up. This penny was minted in 1793 and is noted as being unusual due to the wreath of a strawberry sprig over the date. It is listed as being worth over three hundred dollars among collectors (Interesting 1933).

Clapp commented to Sheldon about the Rabin specimen in 1946,

> I examined the Phila 5-E and judging from Crosby's figure, the Phila. cent was the better. I could have had it for $2500.00 don't know whether it was ever sold (Clapp 1946, 4).

Other advanced collectors were suspicious of the Rabin cent when it was first advertised. In the mid-1940s, Homer K. Downing took notes

of a conversation with Henry C. Hines, including the remark, "Strawberry offered by Rabin for $2500 is questionable" (Downing, [1944-1945?]). There is no question of its genuineness today; it is as genuine as the other three strawberry leaf cents. The surface of the coin is porous, but the detail is sharper than the Saltus-ANS specimen.

The Fata Morgana of the Fifth Strawberry Leaf Cent

When the Chapmans catalogued the Winsor collection in 1895, they said of the strawberry leaf cent, "Excessively rare, only about six specimens known - none fine" (Chapman 1895, 51 lot 823). Actually only three specimens were known when the Chapmans wrote. The estimate of six is an error which crept in under deadline pressure. Similarly, James Kelly said in his May, 1949 auction that six were known. Woodward and Frossard, by contrast, got the number right: three.

There is a persistent rumor of a fifth strawberry leaf cent. In *Early American Cents,* Sheldon lists the unique 5-D, and then enumerates three 5-Es: condition 1 (which is the Saltus-ANS piece), condition 3 (which is the Parmelee-Hall-Staples piece), and a third described as "Good," (which is the Rabin piece). He adds, "There have been rumors of the existence of still another" (Sheldon 1949, 61-62). In his *Encyclopedia,* Walter Breen lists five strawberry leaf cents: 1) 5-D; 2) 5-E Parmelee-Hall-Staples, VG; 3) 5-E Saltus-ANS, AG; 4) 5-E Rabin, AG; and 5) 5-E "Reported" (Breen 1988, 180-181; catalogue number Breen 1643).

Walter Breen mentioned one of these rumors in a letter to Richard Rosichan in October or November 1954. Breen wrote,

> There is a rumor ... that a Swedish or Danish sculptor owned a "clover leaf" cent in VF-20. It was exhibited at the N.Y. Numismatic Club some years back but the fellow subsequently went back overseas and took the coin with him. I have little doubt that the coin will subsequently turn up. (Money Tree 1995, lot 368)

Rosichan apparently suggested that the Swedish-Danish coin might be an electrotype, because Breen replied,

> If there exists an electro of a Vf clover-leaf cent, where is the original it was made from? I have seen only one electro and it is of the NC-2; this electro is in ANS. (Money Tree 1995, lot 369)

(I now know of at least four different electrotypes, but all are of NC-2, Crosby 5-D; I shall enumerate the electrotypes later.)

I tried to confirm this rumor by searching the minutes of the New York Numismatic Club, as published in the *Numismatist,* for the period 1940-1954. The minutes of that period listed the exhibits in detail. I did not find anyone exhibiting a strawberry leaf cent of any kind; the only persons to exhibit cent varieties in depth were Homer K. Downing and Willard C. Blaisdell. I did not notice any recognizably Scandinavian names among the attendees, either.

In January 1957 Walter Breen started a very useful short column in the *Numismatist* called the "Cent Collectors' Forum"; this summarized the state of research on large cents, probably as part of the run-up to the publication of the second edition of the Sheldon book, *Penny Whimsy.* Breen got himself thoroughly confused as to the number of strawberry leaf cents. He suggested in January 1957 that there were as many as six strawberry leaf cents - perhaps he was influenced by the Chapmans or James Kelly. These were the unique 5-D, and five examples of the 5-E:

1. The coin described as "Condition 1" in *Early American Cents;*
2. The Saltus-ANS coin (which Breen graded as "condition 3 or 4");
3. The Parmelee coin ("may reach or exceed condition 7");
4. The Rabin coin ("Obverse condition 3, reverse condition 5; very rough planchet");
5. A coin sold to a New England collector by James Kelly, which was the finest known 5-E (Breen 1957a, 25-26).

It is interesting that the Swedish or Danish sculptor mentioned in the 1954 letter has vanished by 1957.

This multiplicity of strawberry leaf cents may be settled by noting that coins have been counted twice. By April 1957 Breen decided that the number 5, the Kelly-New England coin, and number 3, the Parmelee coin, were probably the same piece (Breen 1957b, 419). This is correct.

The doubling of the other coin is a bit more complicated. In *Early American Cents* Sheldon writes about 5-E,

> When Crosby wrote, but two were known; one of them in condition 1, and the other, in the Dr. Hall collection, could perhaps be described as condition 3. This is the one photographed (obverse and reverse) for the Crosby book. (Sheldon 1949, 62).

Breen may have been led astray because Sheldon undergraded the coins: the Saltus-ANS piece, which Sheldon here called condition 1, Breen in 1957 graded as "condition 3 or 4," and the Parmelee piece,

which Sheldon called condition 3, Breen said "may reach or exceed condition 7."

The clear solution is that the "condition 1" cent and the "Saltus-ANS" cent are the same coin. Unfortunately, when Breen and Sheldon tried to correct this error in 1957, they confused this matter further. Breen wrote in April 1957, "Dr. Sheldon now admits that the 'Condition 1' example of Crosby 5-E was mentioned from a reference to one of the three cents known to Crosby, and therefore it must have been the 5-D" (Breen 1957b, 419). This is not true; the Condition 1 Strawberry leaf cent in *Early American Cents* is the Saltus-ANS 5-E, not the unique 5-D. Perhaps Sheldon was genuinely confused; or perhaps he was so vain about his grading system that he preferred to muddy the waters further, rather than admit he had undergraded an about good 3-4 coin as basal state 1.

To summarize the rumors of additional strawberry Leaf cents:

1. In 1949 Sheldon said that there were rumors of a fifth strawberry leaf;
2. In October or November 1954 Breen mentioned a rumor about a Swedish or Danish sculptor who brought a strawberry leaf in VF-20 to the New York Numismatic Club;
3. In January 1957 Breen listed six possible strawberry leaf cents;
4. In April 1957 Breen cut the number back to four, and he also listed only four in his 1959 article in *Empire Topics;*
5. In 1988 Breen listed in his *Encyclopedia* a fifth strawberry leaf cent as "Reported."
6. In 1991 Breen said "4 or 5 survivors." (Breen 1991, 37).

Finally, there are two mentions of strawberry leaf cents which I believe refer to actual coins: the advertisement of A. E. Marks in the *Numismatist* of July 1893, which I believe refers to what became the Saltus-ANS coin; and the mention of the discovery among banks' holdings of coins in the *Numismatist* of December 1933, which I believe refers to the Rabin coin.

Del Bland very kindly brought the Marks advertisement to my attention. It reads as follows:

> Coins for Sale.
>
> By A. E. Marks Woodfords Me.
>
> 1793 Cent. Strawberry leaves and blossom over date; much better than the Parmelee cent.
>
> $100 (Marks 1893).

To describe what became the ANS specimen as "much better than the

Parmelee cent" is an extreme example of overgrading. Despite the grade discrepancy, I think this must be the Saltus-ANS specimen because that coin was then owned by Ferguson Haines of Bideford, Maine, which is quite close to Woodfords. Haines had been seeking to sell the coin since 1880, but no one would meet his price. It would be remarkable if Maine harbored two strawberry leaf cents in 1893 - Maine has never been a wealthy state. Furthermore, the price of $100 is exactly the same as Haines' reserve at its last auction appearance, the Chapman auction of October 1888.

Denis Loring expressed the situation best a quarter century ago: "Exactly four Strawberry Leaf cents are known to exist; three share one reverse die, while the fourth is unique. Periodically rumors of another specimen circulate, but to date all searches have been fruitless" (Loring 1972, 92).

Photographs of the Strawberry Leaf Cents

The strawberry leaf cents have been listed as a variety in every work on 1793 large cents from Crosby forward. They are so rare that even obtaining photographs of them is difficult. Levick was the first to encounter this difficulty. When Levick assembled the cents for his photographic plate of 1793 large cents, the only strawberry leaf cent known was the unique 5-D. Levick had to photograph obverse and reverse at the same time of a unique coin. He had an electrotype made of the coin (Crosby 1869).

George Kolbe discovered and Frank Van Zandt confirmed and published that there were two versions of the Levick plate (Van Zandt 1994). As best as I can tell, for the first version, the electrotype was used for the reverse and the genuine 5-D for the obverse. For the second version, the electrotype was used for the obverse and the coin for the reverse.

In the nineteenth century the strawberry leaf cent was the key coin in the large cent series. When writers on large cents acquired a strawberry leaf cent, they could embark upon a descriptive account of the entire series. When David Proskey and Edouard Frossard had consigned to them a strawberry leaf cent, they commenced the only two comprehensive listings of the large cent series ever published. The strawberry leaf cent has inspired comprehensive monographs of the entire large cent series as well as narrower treatments of cents of 1793 or just the strawberry leaf cent alone. Appropriately, a line drawing of

the obverse of the strawberry leaf cent serves as the frontispiece for the Doughty monograph, which was an expansion of Proskey's work.

Proskey had line drawings made in 1879 from what became the Parmelee specimen (Proskey 1879, 169; fig 1); Doughty had this line drawing re-done in 1890 when he published Proskey's articles as a separate book (Doughty 1890, 6; fig. 2), partly because the Proskey drawing was designed to show the sprig as a strawberry plant, and Doughty believed it to be a laurel blossom. The Doughty drawing is more detailed and more careful in depicting the individual coin; the Proskey drawing just tried to show the general points of the type.

1. Proskey line drawing of the strawberry leaf (1879).

2. Doughty line drawing of the strawberry leaf (1890).

Frossard used the George Merritt collection as the basis for his monograph on large cents, and the most notable coin in the Merritt collection was the third example to be discovered of a strawberry leaf (the second 5-E). For the cents of 1793, Frossard photographed actual

coins, which meant that he needed two examples of each die marriage to show obverse and reverse. Frossard used the Merritt 5-E for the reverse (this is the coin which is now in the ANS collection) and borrowed from Parmelee the finer example of the 5-E to show the obverse. Frossard did not publish any photograph showing reverse D (Frossard 1879b).

The Parmelee sale of 1890 had on its plate 6 a colorized photograph of fugio cents, large cents, and half cents, including the finest strawberry leaf cent. This has been used for the photograph in the *Guide Book of United States Coins* (the Red Book) in every edition since the very first one issued in 1946. The Red Book has cleaned up the photograph from time to time, so that it is not so dark, but it is clearly the same photograph. The first edition of the Red Book listed a price for the strawberry leaf cent - $1500, in italics, indicating that it was an approximation. Since the ninth edition, which was issued in 1955, the strawberry leaf cent has been unpriced (Yeoman 1947, 63; Yeoman 1956, 63).

In 1897 Crosby expanded his article on the cents of 1793 into a fuller monograph. He used the collection of Dr. Thomas Hall as the basis for his work. His photographic plate may be either a composite, or, perhaps more likely, photographs of electrotype shells, because he shows obverse and reverse of the same coin, namely the Parmelee 5-E, then in the Dr. Hall collection (Crosby 1897, plate II). For reverse die D (ONE CENT low) Crosby used the Winsor-Hall specimen; for obverse die 5 and reverse die E (ONE CENT high) the obverse and reverse of the Parmelee-Hall specimen. This is the only occasion on which a photograph of the reverse of the Parmelee-Hall-Staples 5-E has been published, as Bill Noyes pointed out to me. We know it must be the reverse of the Parmelee-Hall piece, and not the Merritt-Saltus-ANS piece (which at the time was the only other example of reverse E known) because the Merritt-Saltus-ANS piece is easily recognized by the large chunk of copper missing from its reverse on the lower left.

In 1914 the American Numismatic Society put on one of the most extensive exhibits of United States and pre-federal coinage ever held. Many superb rarities were displayed. One of the rarities was the Saltus-ANS strawberry leaf cent, by then owned by the Society. The exhibit catalogue had a new photograph of the obverse and reverse of the Saltus-ANS cent (ANS 1914, 65 and plate 22). This identical photograph was then re-used by Wayte Raymond when he issued his *Standard Catalogue of United States Coins* in the 1930s (*Standard*

Catalogue, 1935, 27). The photograph may be identified by a number of black specks which appear on the photograph and which are not on the coin.

In September 1941, William Rabin advertised for sale the fourth strawberry leaf cent to be discovered, and published photographs of the obverse and reverse in the *Numismatist* (Rabin 1941). Photographs of this coin also appeared in the James Kelly auction of May 1949.

When Sheldon and Downing assembled the photographs for *Early American Cents,* the unique 5-D was in the collection of Charles M. Williams of Cincinnati. They were unable to obtain it for photography, so they used the reverse of the electrotype in the Clapp collection in the ANS. We know this by plate-matching the *Early American Cents* plate to the Clapp electrotype and comparing it with the unique 5-D; the most notable distinguishing mark on the electrotype is a discoloration at about 2 o'clock on the reverse which Denis Loring pointed out (Sheldon 1949, plate 1). What we know from plate-matching is confirmed by a list entitled "Halftones" prepared by Homer K. Downing - a list of which 1793 cents Sheldon and Downing planned to photograph for *Early American Cents.* At this point the NC designation had not been invented; instead Downing marked the NCs with a star. The entry reads, "* 5D O + R Clapp Electro," indicating that they intended to use the Clapp electrotype for their photograph of the obverse and reverse of the Crosby 5-D (Downing [1947?]). For the 5-E, they used the Saltus-ANS specimen. As it happened, Sheldon did not illustrate obverse and reverse of die marriages separately: he arranged his photographs in die chains, so the obverse of the Saltus-ANS 5-E served for the 5-D as well, and the electrotype photograph was only used for reverse D.

In the late 1950s Sheldon obtained a photograph of the actual 5-D and the new photograph of reverse D replaced the photograph of the electrotype in *Penny Whimsy.* It is clearly a new photograph because it has a much darker tone than the other photographs on the page (Sheldon 1976, plate 1). Sheldon and Dorothy Iselin Paschal had many coins re-photographed by Kenneth Bressett in May 1957 for the revision. Since 1991 the Bressett negatives have been in the ANS library, but a review of the eight rolls of negative film showed no strawberry leaf cent, so the *Penny Whimsy* photograph must come from somewhere else. It is possible that Sheldon obtained this photograph through Walter Breen, who worked closely with Sheldon and Paschal on the revision. Breen was able to obtain the 5-D and the Rabin 5-E from

Floyd Starr for photography, which he published in *Empire Topics* in 1959. The photograph of the Saltus-ANS example continued to be used for obverse 5 and reverse E.

In 1984, Stack's published excellent black and white and color photographs of the 5-D and the Rabin 5-E in their catalogue of the Floyd Starr collection (Stack's 1984, lots 6 and 7).

For Breen's *Encyclopedia,* a photograph was obtained of the Saltus-ANS specimen, probably prepared in the ANS's own photographic laboratory by Michael Di Biase (Breen 1988, 181).

Superb photographs were made of the strawberry leaf cents around 1988, when William C. Noyes photographed the coins then in the possession of R. E. Naftzger, jr., including the strawberry leaf cent. These served as the basis for Noyes's *United States Large Cents,* making available for the first time excellent, greatly enlarged photographs of the strawberry leaf cents (Noyes 1991). The Rabin coin, however, looks better in real life - when viewed "in the copper" - than it does in the Noyes photograph.

The Iconography of the Strawberry Leaf Cents

There has been much debate over what the leaves represent. Levick and Crosby in 1868 and 1869 call them clovers or trefoils. The strawberry leaf designation goes back to David Proskey, who first used it in November 1879 in the *Coin Collector's Journal* in his series of articles on cents, which were later expanded into the reference work published under the name of Francis Worcester Doughty. Doughty, however, decided that the sprig was actually a laurel blossom, and amended Proskey's text accordingly (Doughty 1890, 6), and other writers have followed Doughty (Rice 1901, 3; Hartman 1939, 283). Crosby decided that the leaves were actually cotton leaves and a cotton boll, and proposed the title "cotton leaf cent" (Crosby 1897, 19, 21).

I consulted my sister, a professionally trained horticulturalist, on this question, and I sent her a photocopy of the Jack Collins photograph of the Atwater wreath cent, and asked her to identify the leaves. She said that the leaves looked somewhat like strawberry leaves, but the depiction is more imaginary than from nature. My sister found the beaded sprays very mysterious.

This is more useful an answer than it sounds: our wreath is an imaginary wreath, the artist is depicting a heraldic device, not plants as found in nature. Breen reached the same conclusion in 1959: "the

plants depicted on the 1793's do not exactly match any known botanical species" (Breen 1968, 210-211). He changed his view in the *Encyclopedia,* saying that "the best evidence suggests" "cotton leaves (the trefoils) and laurel, probably bay laurel." He adds about laurel, "It was smoked by priestesses at Delphi to induce the altered state of consciousness enabling divination and prophecy, though Rittenhouse may not have known this last" (Breen 1988, 181). Breen's suggestion that the reverse of the wreath cent represents a psychotropic drug deserves high marks for its originality. Despite Breen's imaginative arguments, however, I think the idea of a heraldic wreath combining two plants, neither of them actually found in nature, is the best explanation.

As it happens, there is a heraldic use of the strawberry leaf: they are the conventional figures of a leaf on the coronet of a duke, marquis, or earl. This usage is listed in the *Oxford English Dictionary,* with several citations (earliest 1827). The 1875 citation says, "It was among the strawberry leaves she chiefly expected to find a husband for her daughter - a marquis at least."

The wreath on the wreath cents is a composite wreath, which combines the laurel, a symbol of glory, with strawberry leaves, a traditional symbol of the high nobility. In short, David Proskey's identification of the leaves as a strawberry leaf seems to me to be the correct one, but the wreath is not an accurate horticultural depiction; it is a stylized heraldic representation.

Three Red Herrings

Before I lay out the various theories as to what the strawberry leaf cents are, I want to eliminate three red herrings: the first of these is David Proskey's belief that the obverse dies are different; the second is Walter Breen's contention that the strawberry leaves on the obverse are punch-linked with those on the reverse of other cents; the third is the argument that the coins must be genuine mint products, because Crosby regarded them as such.

Proskey was the discoverer of the ONE CENT high variety, and he believed that not only were the reverses from different dies, but so were the obverses; and he describes them in *The Coin Collector's Journal.* On the ONE CENT low variety the top of the forehead is immediately beneath the center of the R of LIBERTY; Proskey's variety 5-C. On the ONE CENT high variety the top of the forehead points between the E and the R; Proskey's variety 6-D (Proskey 1879, 179). When Francis

Worcester Doughty incorporated much of Proskey's work into his own book, he took over the distinction between the two obverse varieties (Doughty 1890, 6-7). Crosby in 1897 said that he thought the two obverses were from the same die, and everyone has since followed Crosby; this is the difference which Crosby refers to when he says, "I must differ ... from Mr. Doughty in regard to the Cent originally described as 'the Clover leaf Cent'" (Crosby 1897, 4, 19, 21-23). (Crosby mistook what was really Proskey's work for Doughty's.) Crosby *probably* was right; every time I have looked at the obverses, they seem more or less the same to me, but all the specimens are so worn that I cannot be absolutely certain about this.

Walter Breen has argued that the strawberry leaf cents are mint products. He has written, "Whatever they may be, they are *not* counterfeits: letters and trefoils and numerals match those on other cents of the year, evidently from the same punches. The *trefoils* on the obv[erse] are the same as on cent reverses." (Pollock 1994, 17). If the strawberry leaves are punch-linked, as Breen contends, that would eliminate many possible theories. This theory Breen took up from Dr. Thomas Hall (Breen 1968, 210). Hall wrote in the margin of his copy of Crosby on 1793 large cents (given to the ANS library by George Clapp), on the strawberry leaves,

> In this connection Mr. Crosby might have added an interesting observation, with which he was familiar, viz: that the punch used for impressing the leaves beneath the bust was similar, and probably identical, with the punch used for impressing the so-called trefoil leaves upon the wreath cent reverses of '93 (Hall n.d., 21).

I have looked very closely at the wreath cents and I concluded that there are enough differences among the strawberry leaves on the reverses that they must have been cut by hand, and not made by punches. In the 1980s Breen developed some very radical theories of device punches, such as a device punch for the chain on the chain cent, a device punch for the head of Liberty on the caps of 1793, and several head punches for the cents of 1794; but he does not revive his theory of device punches being used for the wreath cents, so he may have changed his mind. Breen's and Dr. Hall's belief that the leaves were applied using a punch is wrong, to my eye; the leaves were cut individually, by hand.

Now as to the third red herring: Crosby did regard the strawberry leaf cents as genuine mint products, but Crosby was not infallible. His work on the cents and half cents of 1793 includes a number of alter-

ations which we consider rather obvious: the Crosby 3-B and the Edwin Bishop Washington half cent (Crosby 1897, 17, 33-34; Kenney 1952, 2-3). It is odd that Crosby should include the 3-B, because as James Neiswinter has shown, Levick had already concluded it was an alteration.

Breen's Theory of Device Punches

Walter Breen has proposed a very radical theory of device punches for large cents, a theory which is as controversial, in its way, as the punch theories which Willy Schwabacher proposed for ancient Greek coins. Both 1794 large cents and ancient Greek coins are held to have particular artistic excellence because the dies were handcut by the engravers, and the Breen and Schwabacher theories challenge this excellence - hence the controversy. Breen elaborated his theory at the ANS Coinage of the Americas Conference in 1984 (Breen 1985, 9-29), and discussed it further in his 1988 *Encyclopedia.*

Breen holds that there was a simple device punch for the chain on the chain cent made by the Germantown typesetter, Jacob Bay, who also made letter punches for the Mint (Breen 1988, 177). This I do not believe, but it is very difficult to disprove because the chain device is such a simple one. The link just below the 9 o'clock link is large on reverse A, small on reverse C. It is clearly not the same punch if you put the two reverses side by side, but the chain device punch might have rotated between the time it was used on reverse A and when used on reverse C.

Breen said that the first to create a more elaborate device punch was Joseph Wright in his final weeks of life, which is the liberty cap head of 1793 (Breen 1988, 179, 181). This I do not believe either: Crosby obverse 12 is notched in at the neck, all later obverses have no such notch. If a device punch had been used, that notch would either be present in all or present in none. Hays 4 (S-17) has a very pointy chin, although it is possible that the chin is the result of later hand cutting after the device was punched into the die.

I think there is general agreement that at some point during the large cent series the Mint began to use device punches for the obverse type of Liberty. This can be most easily seen with the varieties of 1797 cents S-122 (Clapp-Newcomb 4), 1797 NC-2 (Clapp-Newcomb 5), 1797 NC-3 (Clapp-Newcomb 28), and S-123 (Clapp-Newcomb 6). All four varieties share the same obverse. In S-123 and the two NC vari-

eties there is clearly a cut on the cheek of Liberty below the eye (fig 3). S-122 is a thornier problem. Clapp and Newcomb say it has the cut on the cheek below the eye; Sheldon says it does not. The cut does not appear on the ANS specimen, but the ANS specimen is in low grade (it is listed at F-12 in the Noyes photo book) and shows evidence of tooling to remove porosity from the high spots and the fields. Since the ANS specimen was bought by Clapp at the October 1938 Stack's auction, which is now thought to have included coins formerly in Sheldon's possession (Adams 1990, 129), this tooling was probably done by Sheldon himself. The cut below the eye does appear on the Schreuder S-122, VF-20, of which there is a photograph in the Noyes book. The gash would have been created by the teeth marks from a saw

3. 1797 cent, variety S-123.

damaging a device punch, which would then result in a raised mark or burr in the die. (A lint mark, by contrast, would not appear on *all* the cents of that variety.) It is possible that there was some lapping of the die to remove the burr after three die marriages, which would make the gash less obvious on S-122, but the omission of the cut from the die description is probably a mistake by Sheldon. Marks of a die clash on S-122, 1797 NC-2, and 1797 NC-3, which are lacking from S-123 - an incuse leaf behind the neck of Liberty - indicate that S-123 does precede, not follow, the other three die marriages.

The order for these four varieties is due to Clapp and Newcomb; Sheldon took over their descriptions, introduced a mistake by omitting the remark about the cut for S-122, 1797 NC-2, and 1797 NC-3, and inserted the late discovery (by Henry Hines) of Clapp-Newcomb 28 right before Clapp-Newcomb 6 (Clapp and Newcomb 1947, 48-49, 58).

The gash below the eye on the bust of Liberty, most visible on the fine cents of S-123 variety from the Goodhue-Nichols hoard, is only explicable by the existence of an obverse device punch. By 1797 the Mint clearly was using a device punch for the bust of Liberty. At the beginning of 1793, even Breen would agree that the Mint was not using a device punch for the head of Liberty. The argument to be resolved is when between that *terminus a quo* and that *terminus ante quem* the device punch was introduced. I do not find Breen's device punch arguments wholly convincing, but they were clearly the result of much careful thought, and should be taken seriously. Breen did his own theory a disservice with his wild story of his discovery in a dream (Breen 1985, 17); most people remember the dream and dismiss the theory.

Besides the pure numismatic evidence, there is the complicating factor of what we know from the documents. In his report delivered to Congress on February 9, 1795, Elias Boudinot described the duties of the engraver of the Mint as follows:

> The Engraver, whose actual duties are the raising and furnishing all punches that are requisite for the completion of the dies, the engraving and sinking all original dies, and raising all *hubbs* [sic; emphasis added] that are struck out of them (*Am. St. P.:Fin.* 1:352).

In a letter to Congress on December 3, 1795, Boudinot said,

> The stealing of the dies, *hubbs,* [sic; emphasis added] milling-stamps, screws, presses, or other instruments used in the coinage, as well as the taking, receiving, adulterating, or secreting, the metals kept in, or belonging to, the mint, call for special provision from the Legislature of the United States (*Am. St. P.: Fin.* 1:358).

By 1795 Boudinot considered the creation of hubs was one of the functions of the mint. This does not mean that the mint had yet succeeded in making lasting design hubs, particularly in light of their problems with the quality of the iron; it means that the mint regarded the making of hubs one of their functions. It now seems to me that the adoption of the "Heads of 1795" may have been the date on which the Mint began to use a hub for the head of Liberty. At any rate we can no longer say, "The dies were all cut by hand," as casually as people said in the past.

An interesting aspect of this question is that as early as 1786 there was a mint in North America with a sophisticated device punch and hubbing operation: this was the Company for Coining Coppers at

Water Street in New Haven. Philip Mossman says that the Connecticut Mailed Bust Right issues of 1785 were made with a device punch; the Draped Bust Left issues which followed in 1786 were made by a hubbing technique, which, as Mossman points out, was 50 years ahead of its time. The device punches were made by Abel Buell, "an uncommonly ingenious mechanic." (Breen 1976, 118-122; Mossman 1993, 168). Yet the Philadelphia mint had to re-invent the wheel. Although there was some overlap between the manufacturers of Confederation coppers and the early Federal Mint, the personnel overlap is almost entirely with makers of New Jersey coppers (Albion Cox, John Harper; R. W. Julian also suggests above that one equipment supplier of the Philadelphia mint, Hannah Ogden, was the widow or daughter of Mathias Ogden), and not with the more sophisticated Connecticut coiners (Breen 1988, 78, 187). The New Jersey coppers, by contrast with the Connecticut coppers, were not made with device punches.

The Reliability of Sheldon as a Source

Sheldon has written that James G. Macallister, a coin dealer of Philadelphia, held that the strawberry leaf cents were contemporary counterfeits. Sheldon writes:

> In 1944, J. G. Macallister expressed himself as "highly sceptical" about the strawberry leaf coins, but thought it would be a fine idea to get all of them together and examine them at one time. He seemed to feel that they might be counterfeit since too little of any one of them can be seen for us to be quite certain that they are *not* counterfeit (Sheldon 1949, 62-63).

This could be useful information, since Macallister was regarded by George Clapp and others as one of the most advanced students of large cents of his day; but Sheldon is an extremely unreliable source. Since it is not generally appreciated how careless Sheldon was with facts, I think it is not out of place to demonstrate it with some simple exercizes.

In 1975, Warren Lapp and Herbert Silberman edited an excellent anthology of articles from the *Numismatist* about large cents. The appendix to this anthology includes biographies of old-time collectors and dealers, heavily based on the recollections of Sheldon and Breen. The information in Sheldon's own profile surely derives from Sheldon himself. It reads:

> Dr. Sheldon, himself, likes to use the Hays, Doughty, or Chapman numbers - the numbers he used when learning. Hays,

> in turn, for whom Dr. Sheldon once worked, insisted on using the Maris numbers (Lapp and Silberman, 1975, 597).

It would be a remarkable achievement indeed for Sheldon to have worked for Hays, because William Wallace Hays, the cataloguer of 1794 large cents, died on July 9, 1899 (Obituary 1899, 29). Sheldon was born on November 19, 1898 (*Who Was Who* 1981, 7:519).

On February 20, 1971, Sheldon delivered a talk to the New York Numismatic Club which later appeared as an article in *Penny Wise* and which contained much discussion of Carl Würtzbach and Virgil Brand (Sheldon 1971). Sheldon took some care over this article; the copy of *Penny Wise* in the ANS library, which was formerly Sheldon's copy, contains two handwritten corrections by Sheldon: on page 74 Sheldon crosses out the final "s" in "thoughts" and on page 75 he crosses out "Chapman" in the third line of the fifth paragraph and writes in "C.W." for Carl Würtzbach above it. Yet this article is filled with misstatements of fact. We can check many of his statements by comparing them with Q. David Bowers's biography of Virgil Brand.

> Sheldon: "For two decades, Clapp, Newcomb, and Hines were generally referred to as the 'Big Three of the Big Cents'." (Sheldon 1971, 74)
>
> It is most improbable that this expression began to be used as early as 1925, as Sheldon suggests. The "Big Three" proper refers to the wartime alliance of Churchill, Roosevelt, and Stalin. It is more likely to be a phrase of the mid-forties than of the mid-twenties.
>
> Sheldon: "Carl Würtzbach and Virgil Brand were small boys in two families who immigrated to Wisconsin from Germany in the late 1860's." (Sheldon 1971, 75)
>
> Bowers says that Michael Brand, the father of Virgil, emigrated from Germany around the time of the Revolution of 1848. The family lived in Michigan, Illinois, and Missouri, but never in Wisconsin. Virgil Michael Brand was born in Blue Island, Illinois, on January 16, in 1862 or 1861. There is no evidence that Virgil Brand ever visited Germany. (Bowers 1983, 27, and *passim*)
>
> Sheldon: "Half a century later, Brand had brewed a small ocean of the 'beer that made Milwaukee famous,' while Carl Würtzbach was a principal bank officer in Lee, Massachusetts." (Sheldon 1971, 75)
>
> The "beer that made Milwaukee famous" is Schlitz. The vari-

ous breweries owned by the Brand family were based in Illinois and Missouri, not in Wisconsin. Schlitz was never one of their brands. (Bowers 1983)

Sheldon: "Meanwhile, in the late 1890's, these two cousins had remained very close friends, and Virgil Brand had turned over about a million dollars to Carl Würtzbach with which to purchase for Virgil Brand's estate, as many as possible of the top flight early U.S. Copper cents (and a few other coins) that might become available." (Sheldon 1971, 75)

Bowers does not mention this million dollar transaction at all; it probably never occurred. Brand did buy Würtzbach's cent collection from him in 1911, but the cost was not a million dollars. Bowers also does not suggest that Brand and Würtzbach were cousins. It is unlikely that they were. Würtzbach seems to have been born in Harzgerode, in the Harz mountains of Central Germany now in Saxony-Anhalt (Sheldon 1947, 779); Brand's mother came from Framersheim, Brand's father from Oldenheim, two towns in the Rhenish Palatinate near Mainz which are about ten miles from each other. They first met in Detroit, possibly through a German-American regional self-help group, a *Landschaft*. Since the Brand family tended to marry into other local families, it is improbable that Brand would have a cousin who had been born in a town hundreds of miles distant from the Palatinate (Bowers 1983).

Unfortunately, I cannot say for certain where Carl Würtzbach was born because my only source for that is an obituary of Würtzbach written by Sheldon (Sheldon 1947, 779). He may have been born in Harzgerode - or he may have not.

In short, Macallister may have said in 1944 that he thought the strawberry leaf cents were counterfeit - or he may have not. I am more than happy to believe that he did, but we cannot be certain.

Theories of the Strawberry Leaf Cent

I shall now lay out the various possible theories as to what the strawberry leaf is.

1) A pattern. Sheldon held this to be so, and Sheldon says that Dr. Hall and Samuel Hudson Chapman did so too. (The reader must remember the usual *caveats* about anything for which we only have Sheldon's say-so.) Breen originally thought the strawberry

leaf cents were patterns; he wrote to Richard Rosichan around October 1954:

> Sheldon is inclined to think them patterns, as did Dr. Hall and others. I agree with this and expect to have them included in the book on pattern and experimental pieces of the U.S. Mint which Dr. Judd and I am co-authoring (expected to go to press about March 1955). (Money Tree 1995, lot 367)

But by 1959 Breen had changed his opinion. He repeats Sheldon's view that the coins are patterns but describes it as "a view with which I cannot agree" (Breen 1968, 212). Unfortunately, Breen does not specifically state in his 1959 article exactly what he thinks the strawberry leaf cents are, although in the 1959 article and in his 1957 columns in the *Numismatist* he appears to be leaning toward regarding them as a regular mint products. By 1991 it seems clear that he did regard them as regular mint products (Breen 1991, 37). Interestingly, despite what Breen wrote in his letter to Rosichan, the strawberry leaf cents never were listed in Judd's books on patterns, although they are listed in the more recent reference work by Andrew Pollock. By contrast, another great rarity of the large cent series, the reeded edge 1795 cent, S-79, has always been listed in the Judd books as a pattern: Judd-20.

2) A normal cent, struck for circulation during a year when the Mint made many dramatic experiments in coin design. This was Crosby's view; it also seems as though this was Breen's new opinion by 1957-1959. It almost certainly was Breen's opinion by 1991 (Breen 1991, 37).
3) A struck fake of the mid-nineteenth century, made during a period when many imaginative fakes were created, such as Edwin Bishop's Washington half cent and the Good Samaritan shilling.
4) A genuine worn 1793 wreath cent, which has been tooled to create the strawberry leaves.
5) A counterfeit of the time. Sheldon says that James G. Macallister, a coin dealer of Philadelphia, held this belief.

Theory (4), a genuine worn 1793 wreath cent which has been tooled by someone like Smith of Ann Street, is a very attractive theory, and if only one example existed, we would give it serious consideration; but it is contradicted by the discovery of the three ONE CENT high specimens. The die link and the die duplicates indicate that the strawberry leaf cents were struck from dies, not made by tooling genuine coins.

Smith's style is very different from the strawberry leaf cent. William

4. Cent tooled by Smith of Ann Street.

D. Smith, an engraver of Ann Street, who has been the subject of much recent research (Smith 1992a-c; Kleeberg and Trudgen 1995), produced works of art (fig 4). The strawberry leaf cent, by contrast, has a very unprepossessing appearance; an unkind critic might even call it ugly. But what clinches the argument against the strawberry leaf cent being a product of Smith of Ann Street is the weight. The ANS has an excellent collection of cents tooled by Smith, no fewer than ten. Contrast the weights of these coins with the weights of the three strawberry leaf cents which we were able to weigh; the weights are in grams:

Smith counterfeits	Strawberry cents
10.613	12.566 (Saltus)
11.001	13.000 (unique 5-D)
11.237	13.442 (Rabin)
11.291	
11.738	
11.749	
11.882	
12.039	
12.143	
12.526	

Note that even the lightest of the strawberry leaf cents, the Saltus-ANS specimen, which has a big lump missing from its reverse, weighs more than even the heaviest cent tooled by Smith of Ann Street. A study of the weights indicates it is very unlikely that the strawberry leaf cents could have been made by Smith of Ann Street.

There were engravers of altered coins at the time - other than Smith - who might have produced a cruder product. The cataloguer of the

1860s, William Woodward, mentions the name of Breschemin of Philadelphia (Smith 1992c, 417). But I believe that the weight, the die link, and the general appearance of the strawberry leaf cent means that it is not a tooled product by Smith, Breschemin, or their colleagues.

Eric P. Newman and I have discussed the strawberry leaf cents extensively: he is a partisan of theory (3), just as I am a partisan of theory (5). He argues:

> Accepting the finding that the edge decoration on each strawberry leaf cent differs from the edge decoration of the other strawberry leaf cents and that the edge decoration was cut into each such coin manually and not by Castaing methods, I believe the production of strawberry leaf cents are forgeries for collectors and not counterfeits for circulation. For a counterfeiter to go to the trouble of making one obverse die and two reverse dies and then put the edge decoration on each piece separately by hand either before or after striking is not practical or profitable. He would never have made enough money to have the project be worthwhile. He would have left off the edge decoration or selected a cent type which had no edge decoration. The application of an edge decoration in my opinion was to deceive further. Thus the strawberry leaf cents would probably have been made in the latter part of the fifty year period after 1793. (Newman 1997)

We have had many friendly conversations about this, but neither has been able to convince the other of his position. Theory (3), a fake of the mid-nineteenth century, is to my mind contradicted by the pedigree history. The first example was discovered probably in 1845, and certainly by 1868; the second in 1877; the third also in 1877; and the fourth in 1941. If the cents were fakes, they would have emerged onto the market around the same time. The coins also do not have the feel of nineteenth century fakes. Nineteenth century fakes tend to be more attractive, with flashy high relief, like Edwin Bishop's Washington half cent, or struck in a flashy metal, like gold.

This leaves us with possibilities 1, 2, and 5: a pattern, a normal cent, or a counterfeit of the time.

I looked very closely at the letters on the reverse of the three specimens I could examine, and I concluded that they were hand cut, not made with punches (figs. 5, 6, and 7). On the 5-E, the N in ONE is small, and does not have much of a base to its left foot; the N in CENT is bigger, and has a big base to its left foot. The lower serif of the first S in STATES is lined up; the lower serif of the second S in STATES

5. Strawberry leaf cent, Crosby 5-D (unique).

6. Strawberry leaf cent, Crosby 5-E (Saltus-ANS).

7. Strawberry leaf cent, Crosby 5-E (Rabin).

extends further to the left than the top part of the letter. The E in CENT is very crowded, and the top part touches the middle bar; the E in ONE is less crowded, and the top part does not touch the middle bar; the E in STATES is rather loose. There are also distinct differences between the lettering on the ONE CENT low and on the ONE CENT high varieties. The top of the T on the ONE CENT high is crowded, the top of the T on ONE CENT low is broad. The lettering is also smaller on the reverse of the ONE CENT high than on the reverse of the ONE CENT low.

There are so many differences among the letters that I think that they were not done with punches, but hand cut. Since the letters are hand cut, the piece is not a product of the United States Mint. Furthermore, I do not think it is a private pattern, because manufacturers of private patterns - like John Harper, the manufacturer of the Jefferson head cents - had letter punches too, albeit different ones.

There are other important differences. David Proskey noted that the base of the head on all wreath cents ends in a point but the base of the head on the strawberry leaves is broader and rounder than other varieties (Proskey 1879, 169). The number of strawberry leaves on the reverse also varies. In the wreath cents, reverse F has six strawberry leaves; reverse G has five; and with H, I, and J the number stabilizes at four. On the strawberry leaf cents, the ONE CENT low reverse has four strawberry leaves, the ONE CENT high reverse also has four, but one of the leaves on the lower left is so tiny as to be nearly a "ghost leaf." Francis Worcester Doughty could not see this leaf - nor could I, until I saw the reverse enlarged many times in a color slide projected on a screen. Doughty wrote, "As it is possible to distinguish but one on the left, however, we have preferred to so state it, subject to correction should a perfect specimen ever appear" (Doughty 1890, 6).

Del Bland suggested that one way to solve the problem might be to compare the edge with a genuine wreath cent. I have compared the edges of the chain cents and the wreath cents in the ANS collection with each other and with the edges of three strawberry leaf cents. The vine and bars device on the chain cents and on the wreath cents are different. Apparently a new edge die was developed when the mint changed from making chain cents to making wreath cents. But when the edges of the chain cents are compared to other chain cents, and when the edges of the wreath cents are compared to other wreath cents, after a bit of adjusting to make sure that the edges are going in the right direction and making allowance for die slippage (which occurs on all

examples), the similarity between identical edges is marked. I have noticed no such similarity between the edge devices on the wreath and chain cents on the one hand and on the strawberry leaf cents on the other. Nor have I remarked any similarity among the edge devices among the strawberry leaf cents themselves. The edge on the cents is well done, but I do not believe they were done with a Castaing machine. I think the edge was added by hand.

The diameter varies on the four specimens known, as opposed to the carefully controlled diameters of the wreath cents; Breen has noted this, as did Levick before him. The weight, however, is good. I have had the opportunity to weigh three of the strawberry leaf cents; the ANS scale weighs to the nearest milligram. My weights tally almost exactly with other weights, such as those published in the Starr catalogue. The unique piece weighs 200.6 grains (13.000 grams; Starr catalogue 200.68 grains). The Saltus-ANS specimen is light, 193.9 grains (12.566 grams), but it has a big gash on its reverse. The Rabin-Starr piece weighs 207.4 grains (13.442 grams; Starr catalogue: 207.44 grains).

Levick and Crosby had much difficulty deciding exactly where in the series the strawberry leaf cent should go. The R in LIBERTY is slightly bigger than the rest of the word, which suggests that the immediate model was Crosby's obverse 7. The way the bottom lock of hair falls straight down also suggests obverses 6 and 7. On the other hand, in the middle of the hair a lock flies straight out, which resembles obverses 9 and 10. The heart-shaped bow on the reverse resembles reverses G and I; the ONE CENT high reverse resembles reverse F, while the ONE CENT low reverse resembles reverse H. The strawberry leaf cents, in other words, are very difficult to place in the series, because they combine elements of nearly all the wreath cents. Whatever it was our counterfeiter copied, he must have copied more than one specific die variety when he was making his dies, and combined disparate elements into one die.

This is very characteristic of counterfeits. Counterfeiting is a clandestine operation, and counterfeiters work under great pressure and are often short of money. Our counterfeiter may have begun to prepare his dies one night, and then spent the wreath cent which was his model the next day, and waited until he received another in change; but it turned out to be a different die variety, so he kept on adding more and more diverse elements into his die. Counterfeit 2 reales, particularly fine products from the counterfeiting mills of the early Republic, often have

8. Counterfeit 2 reales, 1801 TH (impossible date and assayer combination).

bizarre combinations: one common variety is a 2 reales of 1801, but with the assayers' initials TH, which on genuine pieces only occurs on 2 reales of 1804 and later (fig. 8).

Other Counterfeit Large Cents

Counterfeit large cents are unusual; most counterfeiters in the early Republic found more profitable outlets for their talents. 2 reales were a favorite; they also made many counterfeit half dollars (fig. 9); and if they went for the high profits of gold, they could counterfeit Brazilian joes (fig. 10).

By the 1840s, it was profitable to make counterfeit large cents. There was a strong demand: because of a shortage of small silver, people used cents instead. The copper price was low enough to permit a profit. R. W. Julian has published documents which show that these

9. Counterfeit flowing hair half dollar, 1878 (impossible date).

cents were made in New York City. In November 1849 a little girl called at a grocery in the Bowery and paid in eighteen bright new cents of 1849. She was asked where she got so many new cents, and she replied,

"I got them out of the keg."
"Well, where did the keg come from?"
"Oh, why we make them."

Julian points out that this operation appears to have started business in 1848, which makes it most probable that one of the coins made by these counterfeiters was the 1848 small date large cent (Julian 1972, 530).

10. Counterfeit Brazilian joe, 1777.

Levick, who is so often the pioneer in the study of large cents, once again takes first place. The earliest record known of the 1848 small date cent is the sale of his collection of in May 1865, lot 1431, where it was described as "1848 Peculiar type, small stars and date, fair condition" (Cogan 1865, lot 1431). When Newcomb wrote, only four examples were known, and it was very eagerly sought after: Clapp, in 1939, paid more for his example of this cent ($25) than for any other 1848 cent (fig. 11). The next two most expensive 1848 cents in Clapp's collection were a Newcomb 18 with a spectacular die break straight across the obverse, for which he paid Elmer S. ("Fall River") Sears $10 in October 1924, and a Newcomb 14 for which he paid W. F. ("Billy") Sunday $3.50 in July 1932. Yet Newcomb called it a "counterfeit of the times." It is good to see that the counterfeiter's art is so highly appreciated. A glance in *Copper Quotes by Robinson* shows that this is even more the case today: there is only one 1848 genuine variety (Newcomb 46) whose value even approaches that of the counterfeit 1848 small date

11. The 1848 small date counterfeit.

(Robinson 1996, 100). The counterfeiters, wherever they are, must be highly amused. Robinson says that ten are known today. A remarkable example which was quadruple struck and damaged by a planchet cutter was sold at auction in March 1996 (Bowers 1996, lot 651).

The pedigree of Clapp's small date cent is slightly mixed up. Clapp wrote on the box, "Found in an old collection in Wisconsin owned by a Dr. Chapman, not recognized by him. J. G. Macallister 10/12/39."

Newcomb, however, wrote,

> The third specimen was found in the fall of 1939. It is from the small dies as the three others, is well struck on a perfect planchet giving an even border; the reverse is "upset." This piece has seen more circulation than the others.
>
> For about forty years this specimen had lain in the collection of Dr. W. Earle Chapman of Cheyboygan [sic] Michigan, but was found by James G. Macallister of Philadelphia in this collection then owned by a gentleman of Columbus, Ohio. It is now owned by Mr. George H. Clapp of Sewickley, Pa.- 1940 (Newcomb 1981, 204).

Clapp's error of "Wisconsin" when the correct reference is "Michigan" is easily understood because there is a well known Sheboygan in Wisconsin, and a less well known Cheboygan in Michigan. When learning of the pedigree from Macallister, Clapp immediately thought of the better-known Sheboygan, Wisconsin, not realizing that Cheboygan, Michigan actually was meant.

Another place which counterfeited large cents was Attleboro, Massachusetts, where many hard times tokens were manufactured, as well as the cents for the Kingdom of Hawaii. An article in the Philadelphia *Native American* of July 1, 1844, said that they could be

had for sixty cents for a hundred; that they could be easily distinguished by comparison, and that a great many were in circulation (Counterfeits 1941).

Another counterfeit large cent is the 1818 cent with fourteen stars (Breen 1988, 203; Hodder 1994). It is even rarer than the other famous counterfeits, the strawberry leaf and the 1848 small date: only two specimens are known, one sold in the Edward Maris sale in 1886 and now in the Mike Ringo collection, and another which was found in a junk box in 1988 and exhibited at the Seattle ANA convention in 1990. I was in Del Bland's study in August 1990 when he and Walter Breen discussed this coin, and I remember them pulling Del's copy of the Maris auction with plates off the shelves to look up the reference. The auction catalogue says,

> 1818 with *fourteen stars.* On the reverse, *the wreath is endless.* Well preserved, and, I believe, *unique.* Its history, like that of the Jefferson head, is involved in mystery. May have been a counterfeit of the day (Henkels 1886, lot 284).

In June 1994 the coin was consigned to Stack's for auction, but was bought back by the consignor (Stack's 1994, lot 257). The date of its issue is disputed; Hodder says the absence of a close collar and obvious signs of die chatter suggests a period before 1835, but this would require us to assume that counterfeiters had access to the same improvements in machinery as the United States Mint. The likeliest date of issue would be in the "Hard Times" of the 1830s and 1840s, like the other counterfeits known.

The ANS has in its collection a peculiar cast counterfeit in brass of an 1854 large cent (fig. 12). But counterfeit large cents remain rare

12. Cast counterfeit in brass of 1854 cent.

birds, not because everybody turned honest on January 1, 1793, but because there were easier things to counterfeit. If I were counterfeiting small change coppers during the early Republic, I would make New Jersey or Connecticut coppers or British or Irish halfpence, which continued to circulate until 1857, and not large cents. The cast counterfeits of state coppers indicate that other people had the same idea (fig. 13).

13. Connecticut cast counterfeit of Miller 3-D.1.

If the strawberry leaf cents are contemporary counterfeits of the 1790s, as I believe they are, they could not have circulated long. I thought that they might have been made in 1794 or 1795, because that would allow the genuine cents time to wear down to a similar low grade as the strawberry leaf cents. But this apparently is not so. The issuance of reproductions made by the same methods as used in 1793 by Ron Landis of the Gallery Mint Museum allows us to test the rate of wear. John Wright has carried a chain cent in his pocket since Ron Landis issued it, and in two years it has worn down from MS-70 to only VF-20. Even if they were made in 1795, the strawberry leaf cents would be in much lower grade than the other wreath cents circulating at the time. I believe that the strawberry leaf cents were made substantially preworn, with little regard for the grade of the other coins in circulation. The wear on the strawberry leaf cents is largely artificial, just as the wear on many Confederation coppers is artificial.

The strawberry leaf cents could not have been produced too long after December 27, 1795, when the weight of the large cent was reduced (Breen 1988, 186-187), because they are struck to the older, heavier standard. A counterfeiter will not put more metal in a coin than he has to. Furthermore, the strawberry cents would have found it diffi-

cult to circulate once there was an abundant supply of coins struck to the lighter standard. Gresham's law appears to have operated on the copper coins as well; not as strongly as it acts upon the precious metals, but still to a limited extent. Most North American counterstamps appear to have been applied in the 1850s. Q. David Bowers did an analysis of 3,348 counterstamped large cents in 1990. These figures gives us some idea of what dates of large cents were circulating in the 1850s. Of cents minted 1793-1794, 1796-1814 (I omitted 1795 from my calculations because cents of that year can be struck to either standard), 2.76% of Bowers' sample bore the dates 1793-1794, 97% bore the dates 1796-1814. The total mintage figures break down to 4.9% 1793-1794, 95.3% 1796-1814 - in other words, fewer counterstamped 1793-1794 large cents are known than we would expect, given the mintage figures. This indicates that people may have been picking out the old, heavy cents from circulation and either hoarding them or melting them down to patch teakettles or strike Bungtown halfpence.

Another indication of the disappearance of the heavy weight cents from circulation is provided by the counterstamp of Devins & Bolton of Montreal, which was applied in the period 1863-1870. This is the commonest North American counterstamp. Gregory Brunk lists 245 large cents which bear this counterstamp. Yet the earliest date of a large cent undertype is 1796 (Brunk 1987, 61-63). Not a single Devins and Bolton counterstamp is known on a cent struck to the old, heavy standard. This suggests that Gresham's law was at work in copper as well.

The strawberry leaf cents, in short, could have been made any time between April 4, 1793 and the end of 1795.

The strawberry leaf cents have been described as a pattern which for some reason was not seen fit for general production. In a way they are, but not a pattern of the US Mint - rather, they are a test run for a counterfeiting operation. In the 1780s there were extensive operations producing and distributing counterfeit coppers in all the northern states, and naturally some people would try their hands at counterfeiting the new cents. But the new Federal cents were expensive to counterfeit: they required much copper, and one had to apply a decorated edge. The Mint feared counterfeits greatly: the use of decorated and lettered edges on Federal coins and also on the Conder tokens of the period is the sign of mints who fear extensive counterfeiting. In 1795 the Mint still feared counterfeiters enough that it experimented with putting cents through the edge machinery used for the silver and gold coins (resulting in the variety of 1795 cent, S-79), but it decided that counterfeits were no

longer a threat, and switched to a plain edge cent. The Mint was right: by 1795 the price of copper had risen enough so that it was no longer profitable to counterfeit cents. Only in the 1840s would the copper price drop again, allowing counterfeiters to produce the 1818 endless wreath cent, the 1848 small date cent, and similar delicacies.

Counterfeits of cents never were a threat, the way they had been with the state coppers. The strawberry leaf cents are a monument to the failure of the counterfeiters. Yankee native ingenuity could produce a superb counterfeit cent - the strawberry leaf cents are excellent pieces of work - but it also knew that there were easier and more profitable coins to counterfeit - 2 reales, half dollars, Brazilian joes, or the always popular Bungtown halfpence. So it concentrated on those.

Pedigrees

Crosby 5-D, Sheldon 1793 NC-2. Unique.

1) From circulation, 1845-John Meader, before 12/21/1868-Richard B. Winsor-Estate of Richard B. Winsor, Deceased-S. H. & H. Chapman, 12/16/1895:823-Sylvester Sage Crosby, 4/1896-Dr. Thomas Hall, 9/7/1909-Virgil Michael Brand, 6/20/1926-Estate of Virgil M. Brand, Deceased, ca. 1934-Armin W. Brand, 2/6/1941-St. Louis Stamp & Coin Co. (Burdette G. Johnson; on consignment), 9/12/1941-James Kelly-Sol Kaplan-Charles M. Williams-Numismatic Gallery (Abe Kosoff and Abner Kreisberg) M.B.S. #68, 11/14/1950:6-Floyd T. Starr, 4/7/1971-Estate of Floyd T. Starr, Deceased-Stack's, 6/13/1984:6-Anthony J. Terranova (as agent)-Roy Edgar Naftzger, Jr., 3/4/1992-Eric Streiner, 1992-Jasper Jay Parrino, 10/7/1995-Anthony J. Terranova, 10/16/1995-Daniel W. Holmes, Jr.

   Photographed in the Levick plates for the Crosby articles on the cent of 1793 (obverse apparently on the first version, reverse on the second); in Crosby (1897) on the cents of 1793 (reverse only; possibly an electrotype shell); in *Penny Whimsy* (reverse only); *Empire Topics,* 1959, and reprinted in *Penny Wise,* 1968; in the Starr catalogue, 1984 (obverse and reverse); and in Noyes, *United States Large Cents,* 1991 (obverse and reverse). The photograph of reverse D in *Early American Cents* is of the Clapp-ANS electrotype, not of a genuine coin.

At least four electrotypes exist which have been made from this coin, almost certainly made by Crosby or Levick:

a) Wayte Raymond, 9/1925-George Hubbard Clapp 12/1946-American Numismatic Society. (Clapp 1925).
b) Grocery Store owner, 1930s-Herbert Silberman-Denis W. Loring. (Loring 1997).
c) Frederick C. C. Boyd, 9/7/1958-Estate of Frederick C. C. Boyd, Deceased-John J. Ford, jr.-Jon Hanson 11/1973-Roy Edgar Naftzger, jr. (Naftzger 1994).
d) Mel Gurshin (Saturday Stamp and Coin Shop), 1958-Thomas Sebring. (Sebring 1989, 1431, 1533).

More certainly exist.

The thick planchet cents of 1793 do not ring well - that is why the planchet was made thinner for the Liberty Cap cents. This makes it difficult to distinguish electrotypes from genuine coins. In the case of the strawberry leaf cent, however, the electrotypes are easily distinguished because their edges are plain. True strawberry leaf cents have the vine and bars design on the edge.

Crosby 5-E, Sheldon 1793 NC-3. Three known.

2) Discovered in 10/1877 by David Proskey-Scott & Company, 10/23-24/1877:201-Henry Griswold Sampson (the underbidder was Levick bidding up to $75 as agent for Crosby)-Lorin G. Parmelee-New York Coin and Stamp Co. (David Proskey), 6/26/1890:671-Charles Steigerwalt, 10/17/1890-Dr. Thomas Hall, 9/7/1909-Virgil Michael Brand, 1926-Estate of Virgil Michael Brand, Deceased, ca. 1934-Armin W. Brand, 2/6/1941-St. Louis Stamp & Coin(Burdette G. Johnson; on consignment) 5/17/1941-James Kelly-Mrs. Staples. Since at least 1949 in the Staples estate in one of the New England states (according to what can be gleaned from various remarks by James Kelly and Walter Breen).

   Photographed in Frossard on the cents of the United States, 1793-1857 (1879) (obverse only); in the Parmelee sale, 1890 (obverse only); in Crosby (1897) on the cents of 1793 (obverse and reverse, possibly electrotype shells). Since 1946 the *Guide Book of United States Coins* has used this Parmelee photograph to illustrate the strawberry leaf variety. The finest example of the strawberry leaf known, but very few people have seen it this century. The last researcher to examine it and publish on it was Crosby more than a century ago. No electrotypes of variety 5-E are known to me, but some may exist, because Crosby may have had electrotype shells made for the 1897 photograph.

3) Discovered by Frossard among the Merritt collection, 1877: George W. Merritt-Edouard Frossard, 1/3/1879:90-Ferguson Haines-William Elliot Woodward, 10/13-16/1880:189-Ferguson Haines-S. H. & H. Chapman, 10/17-18/1888:846-Ferguson Haines (advertised for sale by A. E. Marks in the *Numismatist* of July 1893)-Edouard Frossard, 12/19-20/1894:700-John Sanford Saltus, 5/16/1906-American Numismatic Society.
Photographed for the first time in Frossard's work on large cents, 1879 (reverse only); ANS 1914 exhibit (obverse and reverse); *Early American Cents* (obverse and reverse); *Penny Whimsy* (obverse and reverse); *Empire Topics,* 1959 (obverse and reverse), and reprinted in *Penny Wise,* 1968; Breen's Encyclopedia, 1988 (obverse and reverse). Easily recognized by the large chunk missing from the reverse on the lower left.

4) From circulation, before 3/1933-Unnamed commercial bank, before 9/1941-William Rabin-James Kelly, 5/13/49:1044-Floyd T. Starr, 4/7/1971-Estate of Floyd T. Starr, Deceased-Stack's, 6/13/1984:7-I. Tatnall Starr (via Stack's), 6/1989-Anthony J. Terranova, 7/1989-Roy Edgar Naftzger, Jr., 3/4/1992-Eric Streiner-Jasper Jay Parrino, 10/7/1995-Anthony J. Terranova, 10/16/1995-Daniel W. Holmes, Jr.
Photographs of obverse and reverse published in the *Numismatist,* September 1941; the James Kelly May 1949 catalogue; *Empire Topics,* 1959, and reprinted in *Penny Wise,* 1968; Starr catalogue, 1984; Noyes, *United States Large Cents,* 1991.
This coin may have been the strawberry leaf cent which was reported to have been discovered among banks' holdings re-examined during the 1933 bank holiday. The early pedigree of this coin was worked out on that assumption.

Acknowledgements

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J. Terranova enabled me to have the unique 5-D and the Rabin 5-E for extensive study and photography. Daniel Holmes and Del Bland also examined the pedigrees and made many helpful additions and corrections. In compiling the pedigrees, I also used Anthony Terranova's notes kept with Holmes' strawberry leaf cents. Finally, just as this book was being readied for the press, Mike Ringo showed me color photographs of an 1818 endless wreath counterfeit which he had just bought - which turned out to be the Dr. Edward Maris specimen.

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The Hiatus

John D. Wright, NLG

Coinage of the Americas Conference
at the American Numismatic Society, New York

November 9, 1996

Webster's Dictionary defines the word "hiatus" as "an opening, a gap, a break with a part missing." Each of the ten coin denominations originally authorized by the United States Coinage Act of 1792 has at least one hiatus in its run of years. Most have several.

Of those ten denominations, from half cent through eagle, only five are still made. And of those, only the cent - the first federally struck coin for circulation - is represented by coins dated every year but one. The hiatus is 1815.

Why are there no 1815 United States cents? Did the U.S. mint make anything else that year? And what else of import was going on here and abroad during the only hiatus in the 204 year run of U.S. cents?

For the first question we need reminding that things are not always what they seem. For example, mint records show no cents struck in 1823, but at least a few thousand pieces bear that date. Those coins are definitely of contemporary manufacture with cents dated 1820 to 1825. Opinions vary between inaccurate or missing records and 1823-dated dies used in 1824. Both positions are credible, but I find the latter to be more so.

There are several proven instances where the U.S. mint used dies in years other than their dating. Examples include 1798-dated cents (S-166) using a broken reverse die that appears unbroken on 1799-dated cents, cents dated 1796 (S-119) struck on Boulton planchets that were not here until November of 1797, and an 1831 cent (N-2) that shares a reverse die with cents of 1835 and was struck AFTER the 1835s.

Other recorded coinage gaps include shutdowns of several months in the 1790s during the yellow fever season and switches to different denominations. Since the mint was responsible for striking up to ten denominations on only three to six presses, something had to give way - not once, but regularly. But these interruptions in cent coinage never extended to a year or more.

Bob Julian's excellent detective work published in the January 1995 issue of the *Numismatist* showed that there were indeed cents struck and delivered late in 1815. But these were from newly prepared dies dated 1816. Darn!! I would really love to have one with the gap date, because that was one of the most significant dates in world history for at least a decade before or after.

To get an 1815 date on a United States coin, the collector will have to settle for a quarter dollar (89,235) struck), a half dollar (47,150 struck), or a half eagle (635 struck). Since each of these is represented

by a single variety, a complete U.S. variety collection of the cent gap-year needs only three coins. But the half eagle is a killer, with only around a dozen pieces known.

1815 Quarter Dollar.

1815 Half Dollar.

During the 1810 decade the Philadelphia mint prepared its own gold and silver planchets: from melting, to alloying, rolling ingots to strip, cutting blanks, and upsetting the edges. Copper planchets, on the other hand, were purchased ready for coining. By this time these were sole-sourced from Britain. With our declaration of war against Britain, we could buy nothing more from this source. By October of 1814 the mint's inventory of copper planchets was exhausted. And the mint limped through 1815 with the minimal silver and gold coinage noted above.

A fire in January of 1816 destroyed the rolling mills of the mint. No planchets for precious metal coinage could be made until the mills were replaced (in 1817).

With the conclusion of the War of 1812, the British embargo on American trade ended and copper planchets could again be ordered from Britain. The first shipment of these was received in December of 1815. So as a poetic revenge, although there were NO 1815-dated cents, the U.S. coinage of 1816 was nothing BUT cents.

Any one of three major episodes is more than enough to make 1815 a significant year. The one best remembered on this continent is the Battle of New Orleans, a lopsided American victory fought two weeks after the Treaty of Ghent officially ended the War of 1812. The two hour battle culminated weeks of preparation and resulted in 13 U.S. casualties versus over two thousand British casualties, the loss of two British generals, and a British withdrawal.

For the British, engaged in Spain before and Waterloo after, New

Orleans is remembered (if at all) as an unfortunate sideshow. For the Americans it was the turning point of our nationhood and our one major land victory of the War of 1812. The final repulse of British forces catapulted the autocratic Andrew Jackson to a national hero status that led to his Presidency 13 years later. And the national mood swung from a long-term pessimism to the cocky self-assuredness that has since become the prototype European view of our country.

Major General Andrew Jackson, "Battle of New Orleans," Gold Medal, 1815.

By 1815 our country had grown to eight and a third million people, with 80 percent of us still living along the Atlantic seaboard. Our major cities included Philadelphia at 75,000, New York at 60,000, Baltimore at 30,000, and Boston at 25,000. Over 80 percent of Americans were farmers. Most "quality" manufactured goods were imported from Europe.

One major outcome of this war was the long-term diminishment of American shipping. In trying to expand her own nautical advantage, Britain forced her ex-colonies to develop a greater self-reliance. The British wartime embargo and her own expansion in trade-

dominance forced the United States into home manufacture of many things that we had customarily imported. These practices would benefit our children more than either nation suspected.

The year of the copper hiatus was also the hiatus between the first and second Banks of the United States. In 1811 the charter of the First Bank of the United States expired. Congress chartered the Second Bank of the United States in 1815, but President Madison vetoed it, and the charter was not passed again until 1817.

During the 1811-1817 bank hiatus many states chartered banks that poured millions of inadequately-backed dollars into circulation. These fostered inflation to the point where by 1815 80 dollars in coin would buy the same goods as 100 dollars in paper. Though accounts were kept in lawful dollars, paper payment was accepted only at the current local rate, reminiscent of the confused finances of colonial days. The paper versus coin exchange rate varied with the health of the local issuing banks, being closer to 90% of par in New England and down as far as 75% in Virginia and points south.

With the charter of the Second Bank of the United States in 1817, federal paper was issued that was fully backed and fully redeemable in coin. The state banks were forced to honor their notes in specie or die, and inflation ceased.

In the spring of 1814 Europe had just ended 22 years of war with the defeat and unconditional abdication of Napoleon Bonaparte, who was then "exiled" to the island of Elba in the Mediterranean with a pension of two million French francs per year. Elba is six miles off the Italian coast.

After ten months Napoleon left Elba for France. The troops sent from Paris to arrest him welcomed their old commander, and Louis XVIII fled into exile. Napoleon took to the field again and began the "hundred days" of his return, which ended with his defeat at Waterloo in June. He fled to Paris, abdicated again, and tried to escape to America. When he was recognized at dockside, he was taken by the British as a prisoner of war. He was tried, convicted, and exiled to Saint Helena in the South Atlantic, over 1,000 miles from the nearest land. There he would live out his days.

The victors re-distributed European kingdoms and territories. Spanish troops, released by the European peace, were hastily dispatched to South America to counter Simon Bolivar's revolution in New Granada. It would prove to be too little, too late, as the domino-effect cleared nearly all of Central and South America of European "ownership" by 1830.

In Britain the long-hoped-for peace abruptly ended demand for military supplies, sent 400,000 demobilized troops home, and brought severe economic depression. A dismal harvest in 1816 added to the massive British unemployment problems, and riots broke out throughout Britain.

Chile, 1 Peso, 1817.

Meanwhile, a cataclysm had occurred half a globe away. A violent volcanic eruption occurred on April 5, 1815. "Tamboro" in the East Indies (about 700 miles north of Australia) blew up, killing 20,000, creating tsunamis (tidal waves) and blowing millions of tons of ash into the stratosphere.

Within a year the ash cloud circled the globe, lowering world temperatures to the point that 1816 is still called "the year without a summer." Heavy snows fell in the Northeast United States in June and July of 1816, clothes left out overnight to dry were frozen stiff in the morning, and frost killed crops in the year that for decades farmers called "eighteen hundred and froze to death."

By 1816 millions of United States cents were being coined from British planchets. Indiana became the nineteenth state. The European map was massively updated. Wars of independence were seething in South America. And the hiatus was past. There has never been another missing year for United States cents. But there have been few other years as noteworthy as 1815.

The Early U.S. Coining Dies in the ANS Collection

Craig Sholley

Coinage of the Americas Conference
at the American Numismatic Society, New York

November 9, 1996

One of the most poorly understood aspects of U.S. coinage from 1793 to 1836 is that of the diesinking and minting processes. Unfortunately there are very few records and no drawings detailing coining operations of this period. Equally unfortunate is the fact that none of the early presses have survived to this day. Several coining dies from this period, however, have survived and these dies can help in gaining a clearer understanding of the early processes and problems.

The American Numismatic Society has five dies of various denominations from this period, all obverse, ranging in date from 1803 to 1818. The dies are quite different than the illustrations which have appeared in numismatic references. They are quite small when compared with dies of the late 1800s and early 1900s, being only around 1.25 to 1.5 inches high and about the same across the base. The dies are briefly described as follows:

1803 Ten Dollar Gold

Fig. 1.

This die was apparently not used; it is not traced to a known variety. Crudely formed, the die is 1.219 to 1.222 inches in height and consists of a machined cylinder approximately .5 inches in height and 1.267 to 1.272 inches in diameter on an octagonal base 1.423 to 1.445 inches across. The cylinder is off-axis (eccentric) to the base. The base is very crudely forged, none of the faces being equal.

1805 Half Dollar, Overton 102

Like the previous die this is a cylinder on octagonal base, but a little more regular than the previous one. The die is 1.200 to 1.205 inch

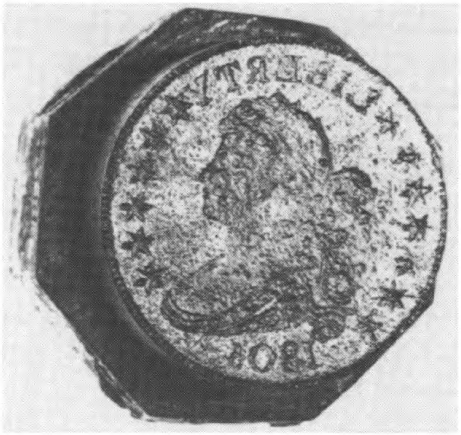

Fig. 2.

es in height and consists of a machined cylinder about .5 inches in height and 1.290 to 1.294 inches in diameter on an octagonal base about 1.537 to 1.550 inches across. The cylinder is concentric to the base. The base is crudely forged, none of the faces being equal, but the workmanship is better than the previous die.

1805 Quarter, Browning 2

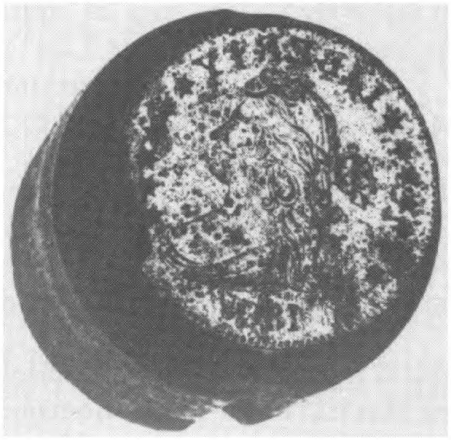

Fig. 3.

This die is a "cylinder on cylinder" design. The die is 1.323 to 1.327 inches in height and consists of a machined cylinder 1.087 to 1.090 inches in diameter and about .4 inches in height on a machined cylindrical 1.362 to 1.367 inches in diameter. The die area cylinder is concentric to base. The machining is quite good, looking quite modern. The die has an inverted "T" cut into the side of the base cylinder, presumably used to capture a set bolt in the die cup to lock it in place.

There are also two depressions or dimples opposite this "T" cut near the top of the base, also presumably for set bolts. Overall the craftsmanship is very good.

1806 Half Dollar, Overton 123 and 124

Fig. 4.

This die is 1.423 to 1.427 inches in height and consists of a finely machined frustrum (truncated cone) atop an equally well-machined cylindrical base. The base cylinder is 1.678 to 1.682 inches in diameter and approximately .95 inches in height. The frustrum is about .4 inches in height with an angle of about 20 degrees; the frustrum is concentric to the base. There is no "neck" area at the face as with modern dies; the die face is the face of the frustrum. The diameter at the die face is 1.289 inches to 1.293 inches. The die shows two "dimples" on the side of the base cylinder near the bottom of the base, one at the date and one at 9:00, presumably where the set bolts in the die cup locked the die in place.

This die may explain the relative lack of rim breaks and cuds in the Draped and Capped Bust half dollar series. Mechanically it would provide the maximum resistance to fracture and chip-out.

1818 Cent, N9

This die is the "cylinder on cylinder" design. The die is 1.361 to 1.364 inches in height and consists of a machined cylinder 1.094 to 1.097 inches in diameter and about .4 inches in height atop a machined cylindrical base 1.419 to 1.426 inches in diameter and about .9 inches in height. The die area cylinder is concentric to the base.

Fig. 5.

There is a single dimple on the side of the base cylinder directly below the date, near the bottom; again presumably for a set bolt to lock the die in place. The machining is very well done.

Observations and Conclusions

The base of all of the dies have been machined flat. This brings up one feature which is not readily apparent, but is shown by the measurements - the die face and the base face are quite parallel to each other, showing that Eckfeldt was quite aware of the necessity to have the faces parallel so that the dies would strike evenly.

The dies also provide some hints as to what the "die cups" looked like: these being the fixtures that held the die while in the press. The cups likely had an internal diameter only slightly larger than the base diameter of the die. This would allow the die to be securely locked in place with a few set bolts. The height of the die cup probably was about the same as that of the die's base. The cup could have been merely a ring, but more likely it was truly a "cup," with a flange or feet to bolt it into the press.

Perhaps the most important feature of the dies is the change in overall form. The dies show a clear evolution from the rather crudely forged 1803 Ten Dollar Gold die to the well made 1805 Quarter and 1806 Half Dollar dies.

This evolution in form ties in quite nicely with Mint records from the National Archives which show that Eckfeldt was experimenting with several types of die steel, and therefore forging practices, during the early 1800s in an effort to improve die life. Likewise a die life analy-

sis of the large cents shows a concomitant rise from about 200,000 strikes per die in 1803 to over 300,000 strikes in 1806 (Sholley 1996).

The "cylinder on cylinder" form of the cent die also explains the cracks, cuds and rim breaks commonly seen on the large cents.

Although Eckfeldt surely realized the superior mechanics of the "frustrum on cylinder" form, it would appear that he used this highly refined, but difficult to manufacture design only for half dollars, these being the most demanding in terms of mechanical strength.

This conclusion is supported by the 1820 Half Eagle obverse die in the ANA Museum which is again a "cylinder on cylinder" design (Hoge 1994).

Fig. 6.

Two other dies from outside the ANS collection likewise support the conclusion that the "cylinder on cylinder" design was the main form used, especially for the large cents. These are the dies used to strike the so-called 1823 restrike cent (Fig. 6).

The obverse die of this non-Mint issue is the same die used for the regular issue, non-overdate, Newcomb 2 variety. The reverse die, the only reverse currently known to the author, is the one used for the 1813 S-293 variety.

The most interesting feature of these dies is that the obverse and reverse dies are the same in form and size, showing that the early dies could be mounted interchangeably in the press. Either die could be placed in the hammer or anvil position for striking. This does confirm research by error specialist Chris Pilliod which suggested that the dies of this period were used interchangeably (Pilliod 1996a; Pilliod 1996b).

Acknowledgements

Thanks to Dr. John Kleeberg of the ANS for his assistance in viewing the dies. Additional thanks to Chris Pilliod for his comments on the early dies.

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An Overview of Proof Large Cents

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at the American Numismatic Society, New York

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Part 1 - Defining a Proof

What is a proof large cent? The easy way out would be to use the late Supreme Court Justice Potter Stewart's description of pornography: "I may not be able to define it, but I know it when I see it." Unfortunately, different people see the same thing different ways, so from the point of numismatic scholarship this definition is not very helpful. Can we do better?

The first attempt to publish a specific list of criteria for proof large cents was by Howard Newcomb in his 1944 book on the cents of 1816-1857:

- Sharp, polished dies
- The coin is struck from new dies or the earliest known state of the dies
- Polished planchets
- Reflective, mirror-like fields
- Sharp, even border beading
- All stars show their centers
- All details show perfectly

The only exception Newcomb allowed was for one-sided proofs: coins with one side (usually the obverse) proof and the other a regular business strike.

In his comprehensive work on proof coins of all denominations, Walter Breen opined that Newcomb's criteria were too strict, particularly for proofs made before the introduction of the steam press and the close collar. Breen put forth his own list of proof criteria:

- Sharper than a business strike
- Struck from 2-4 blows of the die
- Polished dies
- Mirror fields
- Sharp letters and stars
- Matte or frosty central devices
- If struck in a close collar, the coin should have square edges and sharp rims.

Breen allowed some exceptions from these rules: A coin that exhibited most, but not all, of these characteristics could still be considered a proof.

The problem with both of these lists is that they were written with perfect hindsight. At any point in time, the proofing process is limited by the coining technology of the day. Early nineteenth-century proofs should not be expected to look like the products of a twentieth-century mint - or even of the later nineteenth century. Newcomb applied characteristics of the proofs of the 1840s and 1850s to pre-1840 coins. Breen was influenced by the King of Siam set and more modern proofs. Any list of proof criteria only makes sense when viewed in the context of what was possible at the time.

In particular, the close collar and the steam press were major advances in the coining process. The close collar was first used in 1828 for silver coins, and probably in the 1834-38 period for cents. It produced far stronger strikes (by restricting the metal flow of the planchet), higher edges, and sharper borders. The steam press was introduced in 1836, although proof large cents continued to be struck on screw presses for several years thereafter. The steam press allowed more uniform striking pressure - hence better strikes - and better positioning of the planchet.

How, then, can we develop a meaningful list of objective standards for proofs if the rules of the game keep changing? The answer is to play a different game, and ask a different question. Let's try to define a proof large cent not by how it was made, but why.

The first identifiable "why" definition of proofs was given by the Englishman Henry Walpole in the 1760s. To him, proofs were "Coins made like medals...to exhibit to the recipients a finer quality of die impression." This definition contains two key words: "recipients" and "finer."

"Recipients" - a proof coin was given to someone. That is, proofs are special presentation pieces. The recipient may be a foreign dignitary, U.S. government official, or simply a collector who paid for the privilege.

"Finer" - proofs are better than business strikes. They are (or should be) sharper, brighter, better struck, and better preserved. They represent the best the mint can do with the technology of the time.

Dr. William Sheldon reiterated this idea in *Early American Cents*: "Proof coins were never struck for circulation ... [they] were used as presentation pieces ... as 'polished up portraits' of the coinage." His definition of proofs, like Henry Walpole's, is based on "why," not "how."

The pre-eminent researcher on proof coins today is Michael Hodder. In preparing to catalogue the October, 1992 sale of the Floyd

T. Starr collection for Stack's, Hodder produced a state-of-the-art paper on early proof coins. This paper was excerpted in the catalogue; a fuller exposition appears in the September 28, 1992 issue of *Coin World*. In it, he set forth what I will call the Hodder criteria for proof large cents:

1. Pre-1840
    - Better impression - multiple strikes. Some stars may not show centers.
    - Fresh dies - though they may not be perfect.
    - Better planchet, possibly polished.
    - Polished dies, but may show mint frost.
    - Mirror fields.
    - Sharper edges, squarer rims.
    - Better preserved - no bag marks or handling marks.

Not every criterion must be 100% satisfied for a coin to be a proof, but most of them must hold. The only clear exceptions are the bronzed (rather than mirror) proofs of 1829 Newcomb 6 and the one-sided proofs of 1827 and the 1830s. Hodder, however, does admit that the distinction between proof and prooflike examples of these years can be very subjective.

2. Post-1839
    - Sharp strike - but even here there is the rare exception, such as the 1843 Newcomb 14 sold as lot 971 in the first Robinson S. Brown sale in 1986.
    - Square edges, sharp "knife" rims.
    - More subjectively, given the improvement in mint technology, the coin must clearly "look proof," i.e. look qualitatively different from the business strikes from those dies.

The Hodder analysis may be conveniently summed up as follows, which I will suggest as the appropriate definition of a proof large cent:

> A proof large cent is a specimen striking for presentation purposes, of the highest standard possible at the time. It is an exemplar of the coiner's art. Or, to quote Hodder: "If it looks entirely different, it probably is."

If a proof large cent is defined by why it was made, then why, in fact, were they made?

1. Presentation to diplomats and dignitaries, as exemplified by the King of Siam set.
2. Internal official presentation to Mint officials and high ranking members of government. Hodder observes that the first year for which a significant quantity of proof cents is known is 1821, the year of President Monroe's second inauguration and the Era of Good Feeling. He theorizes that the 1821 proof cents were struck primarily to commemorate the inauguration. Similarly, the 1841 Newcomb 1 proofs may have been related to the elections of 1840.
3. On demand. Prior to 1840, the Mint did not engage in a formal program of offering proof coinage to the public. Individuals who wanted proofs simply requested them from the Mint, which usually supplied them at face value.
4. For a profit. Beginning in 1840, proof coins were not only made in response to specific requests, but also for the express purpose of selling them later at a profit. The Mint produced both individual coins and year sets. Eventually, on-demand strikings gave way to a formal program of proof set manufacture.

Part 2 - The Middle Dates, 1816-1839

1817. Proofs as we currently think of them were first struck in 1817. The reasons: the twenty-fifth anniversary of the establishment of the Mint, a move to new and larger quarters, and the installation of new equipment. Three specimens are known, all Newcomb 6. One of these, though clearly proof, has a planchet defect from the rim through the eighth star to the hair. See Figure 1.

1. 1817 proof cent, Newcomb 6.

1818. No proofs are known of this date.

1819-1820. Both dates are extremely rare; perhaps 3-6 are known of each.

1821. This is the first year for which proofs appear with any frequency. At least fifteen are known, most of them Newcomb 1.

1822. The random nature of proof production in these early years is well illustrated by 1822: Only ten to twelve proofs are known, but they include five different varieties.

1823. Five proofs are known; four overdates and one perfect date.

1824. No proofs are known.

1825. Breen lists five confirmed examples (all Newcomb 9), and a few questionable ones. I have seen four of the Newcomb 9s. In my opinion, none are proof. In fact, I will go further: I believe no proof cents of 1825 exist.

1826. No proofs are known.

1827. Eight to twelve are known, including one one-sided proof - the first we have seen.

1828. Extremely rare: only two proofs are known.

1829. Like 1821, a date for which a quantity of proofs may have been made to commemorate the previous year's elections. A dozen or so are known, half brilliant, half bronzed. The bronzing experiment was promptly abandoned, at least for cents.

1830. Six known; five are Newcomb 10.

1831. Commonest year yet. At least twenty, half Newcomb 3, the others are four different varieties. Of this latter group, six or eight are one-sided proofs, presumably meant to be displayed with the proof side showing. All but one have a proof obverse and Mint-State reverse; one Newcomb 6 has a proof reverse and a Mint-State obverse.

1832. Another extremely rare year, with three proofs known.

1833. Only one proof cent is known of this date. It is an extraordinary coin. Four blows of the die are clearly visible on the lips, yet some of the stars and the wreath are not fully struck. The lone example is a Newcomb 4, from the earliest known state of the dies, but not perfect. The coin is brilliant red with fully reflective mirror-like surfaces, and it also displays cartwheel lustre. It is a wonderful example of how a coin can seem to break all the rules and yet be a proof in the sense we have defined it: This coin is obviously something special. See Figure 2.

1834. A fascinating year. It features the only proof-only variety of the Matron Head design, 1834 Newcomb 7, of which seven are

known. See Figure 3. It is also the year of the King of Siam set, which includes a proof 1834 cent - Newcomb 3. Why was a special variety struck only in proof, and yet proof strikings of a different variety used in the King of Siam and Sultan of Muscat sets? No one knows.

2. 1833 proof cent, Newcomb 4.

3. 1834 proof cent, Newcomb 7.

1835. Only two known, one one-sided.

1836. Five one-sided proofs are known (all Newcomb 1), and one or two two-sided proofs.

1837. Another year like 1822. Perhaps eight or ten are known, of five different varieties.

1838. All are Newcomb 11, and this is the commonest of all middle date proof varieties. Perhaps two dozen exist.

1839. No proofs are known.

Part 3 - The Late Dates, 1840-1857

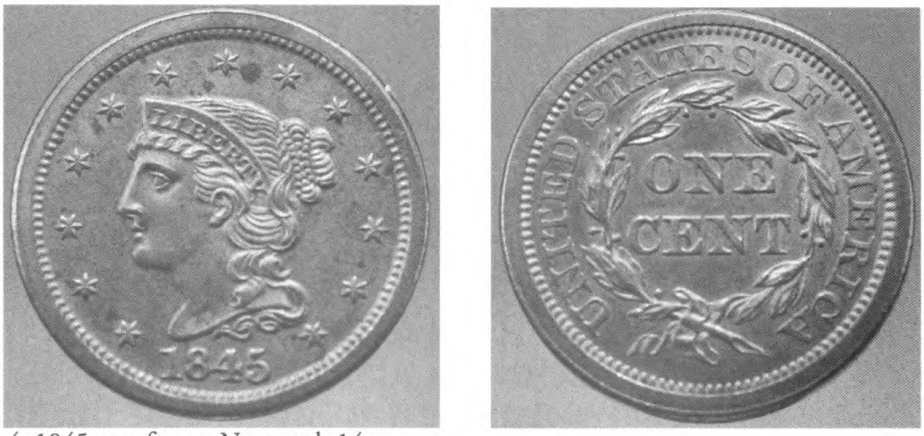
1840. About fifteen are known, all Newcomb 2 - the die with a small date cut over a large 18. Why was the only mis-cut die of the year used to produce specimen strikes? These proofs often have a unique "orange peel" texture and reddish golden lustre. The look of an 1840 Newcomb 2, once you've seen a few, is unmistakable.

1841. Newcomb 1 is a proof-only variety, and the second commonest of all the large cent proofs. Breen estimates that twenty-four were struck, but I can trace at least thirty, and there are surely more out of there. Again, these may have been struck in connection with the elections of 1840.

1842. Much rarer. About ten are known, all Newcomb 1. 1841 Newcomb 1 and 1842 Newcomb 1 share the same reverse die.

1843. Two proof Newcomb 12s are known, and fifteen to eighteen of the proof-only variety Newcomb 14.

1844-1849. Proofs of these years are of two types, originals and restrikes. By "originals" I mean proof specimens struck from dies also used for business strikes. These are extremely rare: two 1844 Newcomb 2s, no 1845s, three or four 1846s, no 1847s or 1848s, and three or four 1849 Newcomb 30s. "Restrikes," on the other hand, are seen much more frequently. This group consists of one proof-only variety of each year: 1844 Newcomb 8, 1845 Newcomb 14, 1847 Newcomb 42, 1848 Newcomb 19, 1849 Newcomb 18. A single reverse die was used for these varieties, readily identifiable by an irregularity on the reverse



4. 1845 proof cent, Newcomb 14.

rim over TED. See Figure 4. It is believed that all of these were struck in the 1850s, along with the contemporaneous half cents, specifically as specimens for collectors. They vary in the number known from ten to twenty or so, with 1844 being the rarest and 1848 the most common. The year 1846 also boasts a second proof-only variety, the tall date Newcomb 24. This is a great rarity, with only four examples traced. Perhaps a few collectors wanted examples of both the small date and tall date varieties.

1850. Five or six are known, all Newcomb 11.

1851. No proofs are known.

1852. A number of examples of Newcomb 8 are claimed to be proof. Perhaps a few do exist, but I have yet to see an 1852 Newcomb 8 that I can unequivocally call a proof. There are also three known of the proof-only variety Newcomb 24, unlisted in Newcomb.

1853. No proofs are known, although prooflike specimens of Newcomb 16 have occasionally traded (and one has been slabbed) as proof.

1854. Twelve or fifteen are known, all Newcomb 12. These usually have a slightly concave appearance are not fully struck on the stars. The line between proofs and prooflike 1854 Newcomb 12s can be very fine indeed.

1855. Two varieties are known in proof: the business dies Newcomb 10 (perhaps twenty), and the proof-only Newcomb 11 (about fifteen). As with 1854 Newcomb 12, the difference between proof and prooflike 1855 Newcomb 10s can be very small.

1856. The proof-only 1856 Newcomb 5 is the commonest of all large cent proofs. Thirty-five to fifty are known. The best of these really are "exemplars of the coiner's art," with brilliant mirror surfaces, razor-sharp strikes and knifelike rims. See Figure 5.

1857. Of the five varieties of this year, two are proof only: Newcomb 3 and Newcomb 5. Of these, Newcomb 5 is slightly the rarer. Perhaps two dozen are known, compared to thirty to thirty-five of Newcomb 3. Like the 1844-1849 series, the proof-only varieties of 1855-1857 were probably struck at one time in order to satisfy collectors. In fact, 1856 Newcomb 5 and 1857 Newcomb 3 share the same reverse die. Perhaps the second set of 1857 dies (Newcomb 5) reflects a final surge of collector demand as the era of large cents finally drew to an end.

5. 1856 proof cent, Newcomb 5.

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The Butternut Large Cent Hoard: A Statistical Study

Steven K. Ellsworth and Christopher B. Schwerdt

Coinage of the Americas Conference
at the American Numismatic Society, New York

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Introduction

Late in April 1996, Colonel Steven Ellsworth of Butternut Coins obtained a large hoard of approximately 4,700 Large Cents from Bob Miller of New Jersey. The coins are thought to have originated from a family in Eastern Pennsylvania. It is estimated that the coins had been accumulated by two to three generations of the same family from the early to the late 1800s.

After attributing about 90% of the coins, the following observations have been made:

1. All of the XF-40 and higher grades were absent from the hoard with the majority of coins ranging from Good to Very Fine (someone probably cherrypicked out the XFs but this has not altered the statistics significantly).
2. Every date was found with the exception of 1793 and 1804 (these were highly collectable even in the early 1800s).
3. Based on the distribution of the varieties within any given year (most levels of rarity were found) and the relatively good correlation between published mintages and the distribution of dates in the hoard, it is believed that the hoard is a good random sample and has not been numismatically searched in the last 50-100 years. Some discrepancies between the published mintages and the hoard findings could be explained by the fact that dies were sometimes used for more than one year until they failed or were thrown out.
4. There were approximately 650 early dates (1793-1814), 3,600 middle dates (1816-1839), and 300 late dates (1840-1857) which could be identified by year.
5. An unusually small number of coins were found for the years 1840-1857 (perhaps these were considered "new coins" and were of little interest at the time the hoard was being amassed).

Statistical Data

This study presents preliminary findings from the Butternut Hoard. Included are:

1. A description of how graphs were generated.
2. Raw data and graphs for:
   —Population census by year for three groups (1793-1807, 1808-1814, 1816-1839).
   —Population census by Sheldon/Newcomb variety for the years 1800-1803, 1807, 1816-1832, 1836, 1837, 1839.

3. The relative rarity (by variety within a year) as predicted by the Butternut Hoard census for the years 1810, 1816-1818, 1820, 1822, 1825-1828, 1831, 1836, 1837, 1839.
4. An expanded Newcomb Rarity Scale used to generate the graphs for Population Census by Sheldon/Newcomb variety, and a Relative Rarity Scale used to reassess rarity based on the Butternut Hoard findings.
5. Graphs and data showing the frequency distribution of "% Population Discrepancies" for both dates and varieties. For years, this is the discrepancy between what the Butternut Hoard predicts for % Population and what the *Red Book* (Yeoman) mintages predict. For varieties, it is the discrepancy between what the Butternut Hoard predicts and what the Expanded Newcomb Rarity Scale predicts.

Generation of Population Census Graphs

Graphs of the Butternut Hoard Population Census compare reported mintages (*Red Book* 1996) as a percent of a grouped population (either by years or by Sheldon/Newcomb variety for a particular year) to the percent of population for Large Cents found and attributed in the Butternut Hoard.

The expected percent of population using the *Red Book* mintages and an "Expanded Newcomb Rarity Scale" is calculated as follows:

For a particular Newcomb or Sheldon variety in a particular year,

$$\frac{\text{Population Size for a Variety Within a Year} \times 100}{\text{Total Population Size for All Varieties of That Year (above R1+)}} = \text{Expected Percent of Population for a Variety Within a Year}$$

The Percent of Butternut Hoard Population above R1+ is calculated in a similar fashion,

$$\frac{\text{Quantity Attributed (Butternut Hoard) for a Particular Variety Within a Year} \times 100}{\text{Total Population of Large Cents Attributed for That Year in Butternut Hoard(above R1+)}} = \text{Percent of Butternut Hoard Population (above R1+) for the Variety}$$

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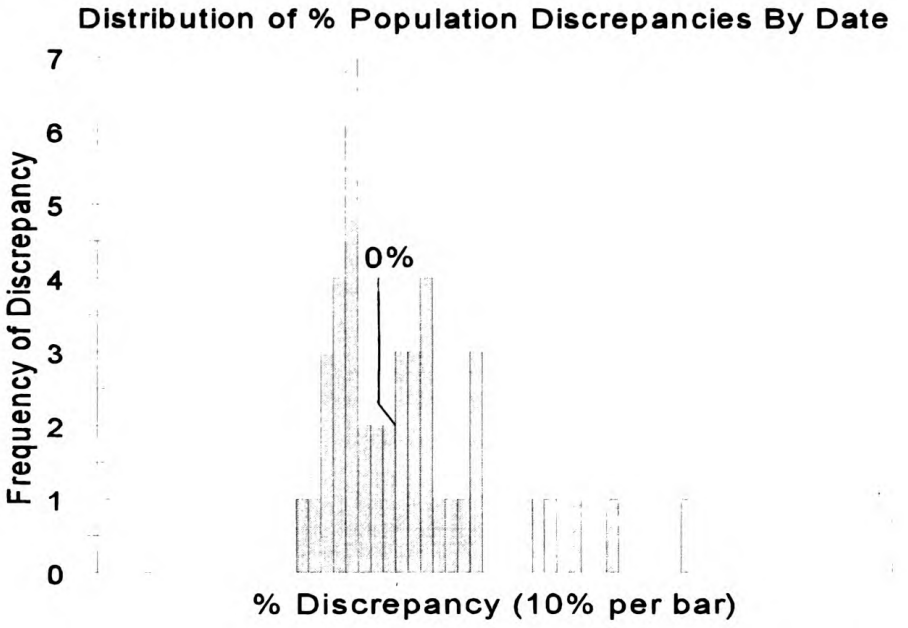
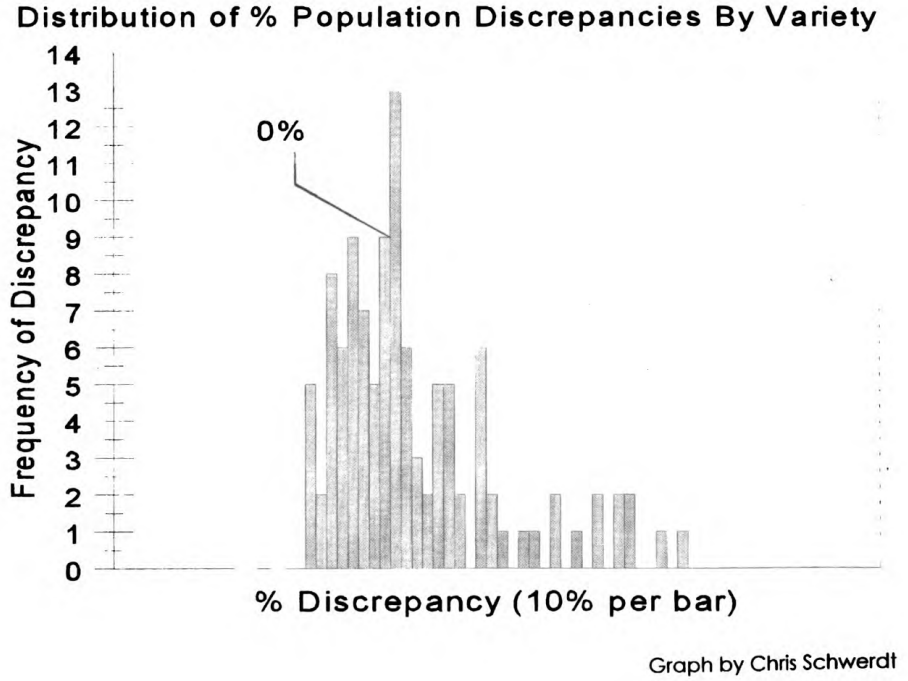
Tables and Graphs

Butternut Hoard Population Census

Date	Quantity Found	Date	Quantity Found	Date	Quantity Found
1793	0	1816	106	1838	373
1794	9	1817	97	1839	222
1795	14	1818	157	1840	5
1796	8	1819	165	1841	3
1797	16	1820	137	1842	6
1798	64	1821	70	1843	94
1799	2	1822	259	1844	65
1800	47	1823	56	1845	3
1801	57	1824	61	1846	5
1802	97	1825	48	1847	8
1803	49	1826	110	1848	6
1804	0	1827	224	1849	5
1805	6	1828	163	1850	6
1806	24	1829	56	1851	17
1807	45	1830	54	1852	10
1808	24	1831	196	1853	10
1809	4	1832	73	1854	3
1810	89	1833	145	1855	8
1811	11	1834	87	1856	26
1812	43	1835	136	1857	2
1813	10	1836	72		
1814	20	1837	492	TOTAL	4,480

% Population Discrepancy By Date (Discrepancy Between Butternut Hoard & Red Book)			
Year	% Discrepancy	Year	% Discrepancy
1794	-60	1818	-12
1795	+7	1819	+10
1796	-33	1820	-43
1797	-27	1821	+233
1798	+39	1822	+128
1799	+150	1823/24	+65
1800	-33	1825	-39
1801	+69	1826	+29
1802	+15	1827	+70
1803	-36	1828	+31
1805	-74	1829	-27
1806	+175	1830	-44
1807	+119	1831	+6
1808	-44	1832	-63
1809	-57	1833	-5
1810	+44	1834	-17
1811	+20	1835	-38
1812	-5	1836	-39
1813	-43	1837	+59
1814	+33	1838	+11
1816	-32	1839	+27
1817	-56	Total = 43 Dates	Total = +513%
		Average Discrepancy	= +11.9%





Relative Rarity Scale (As Predicted by Butternut Hoard Census)	
% Population of Butternut Hoard / % Population of Red Book Mintage or Expanded Newcomb Scale	Relative Rarity Description
0.00 - 0.32	Very Rare
0.33 - 0.66	Rare
0.67 - 0.99	Somewhat Rare
1.00 - 1.66	Somewhat Common
1.67 - 2.32	Common
2.33 - 4.00	Very Common

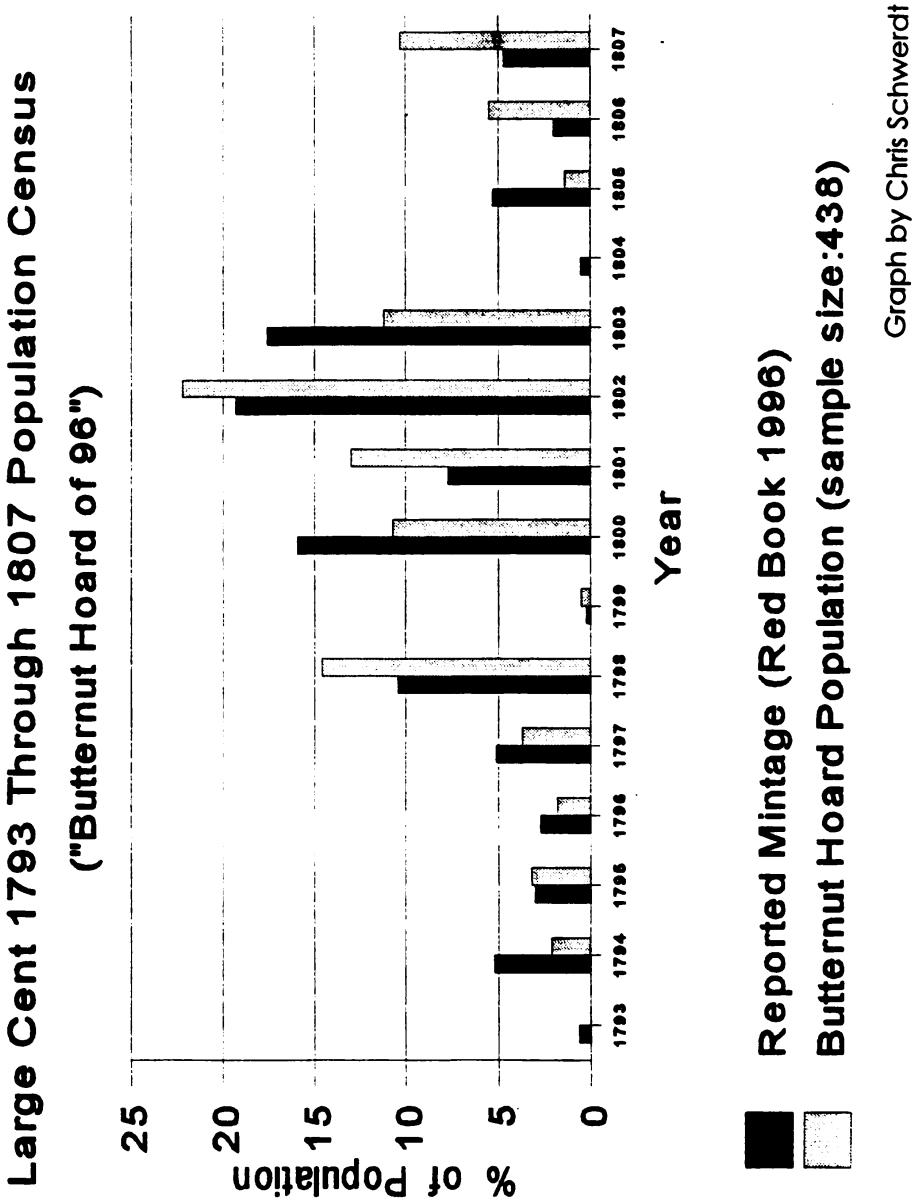
1793 - 1807 Large Cent Population Census Comparison

Date	Quantity Found in Butternut Hoard	% Population of Butternut Hoard	Reported Red Book Mintage (in millions)	% Population of Red Book Mintage
1793	0	0	0.11	0.6
1794	9	2.1	0.92	5.2
1795	14	3.2	0.54	3.0
1796	8	1.8	0.47	2.7
1797	16	3.7	0.90	5.1
1798	64	14.5	1.84	10.4
1799	2	0.5	0.04	0.2
1800	47	10.7	2.82	15.9
1801	57	13.0	1.36	7.7
1802	97	22.1	3.44	19.2
1803	49	11.2	3.13	17.5
1804	0	0	0.10	0.5
1805	6	1.4	0.94	5.3
1806	24	5.5	0.35	2.0
1807	45	10.3	0.83	4.7
Totals	438	100%	17.79	100%

Relative Rarity As Predicted By Butternut Hoard Census

(1793 - 1807 Large Cents)

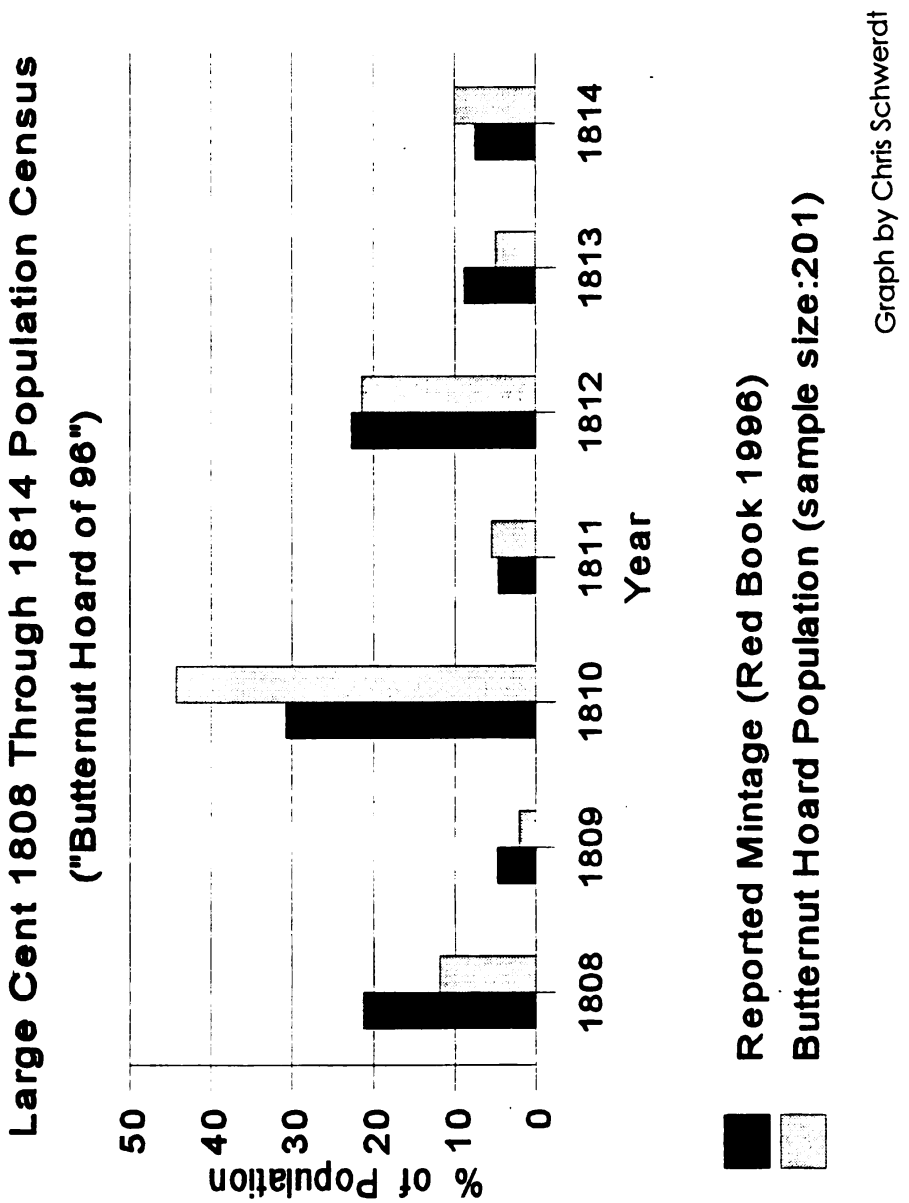
Ranking	Date	% Population of Butternut Hoard / % Population of Red Book Mintage	Comparative Rarity
1	1793	0	Very Rare
2	1804	0	Vey Rare
3	1805	0.26	Very Rare
4	1794	0.40	Rare
5	1803	0.64	Rare
6	1796	0.67	Somewhat Rare
7	1800	0.67	Somewhat Rare
8	1797	0.73	Somewhat Rare
9	1795	1.07	Somewhat Common
10	1802	1.15	Somewhat Common
11	1798	1.39	Somewhat Common
12	1801	1.69	Common
13	1807	2.19	Common
14	1799	2.50	Very Common
15	1806	2.75	Very Common



Graph by Chris Schwerdt

1808 - 1814 Large Cent Population Census Comparison				
Date	Quantity Found in Butternut Hoard	% Population of Butternut Hoard	Reported Red Book Mintage (in millions)	% Population of Red Book Mintage
1808	24	11.9	1.01	21.2
1809	4	2.0	0.22	4.6
1810	89	44.2	1.46	30.7
1811	11	5.5	0.22	4.6
1812	43	21.4	1.08	22.6
1813	10	5.0	0.42	8.8
1814	20	10.0	0.36	7.5
Totals	201	100%	4.77	100%

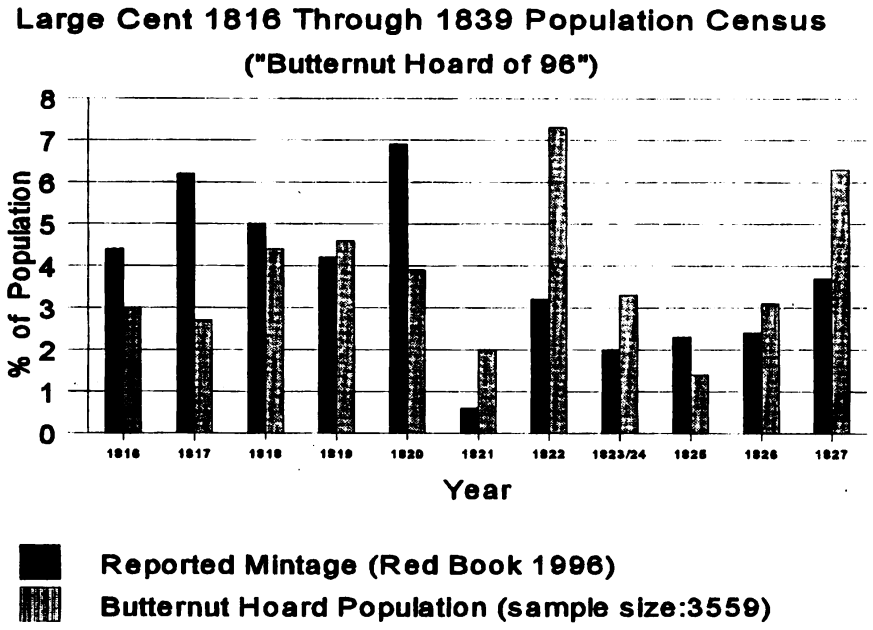
Relative Rarity As Predicted By Butternut Hoard Census (1808 - 1814 Large Cents)			
Ranking	Date	% Population of Butternut Hoard / % Population of Red Book Mintage	Comparative Rarity
1	1809	0.43	Rare
2	1808	0.56	Rare
3	1813	0.57	Rare
4	1812	0.95	Somewhat Rare
5	1811	1.20	Somewhat Common
6	1814	1.33	Somewhat Common
7	1810	1.44	Somewhat Common



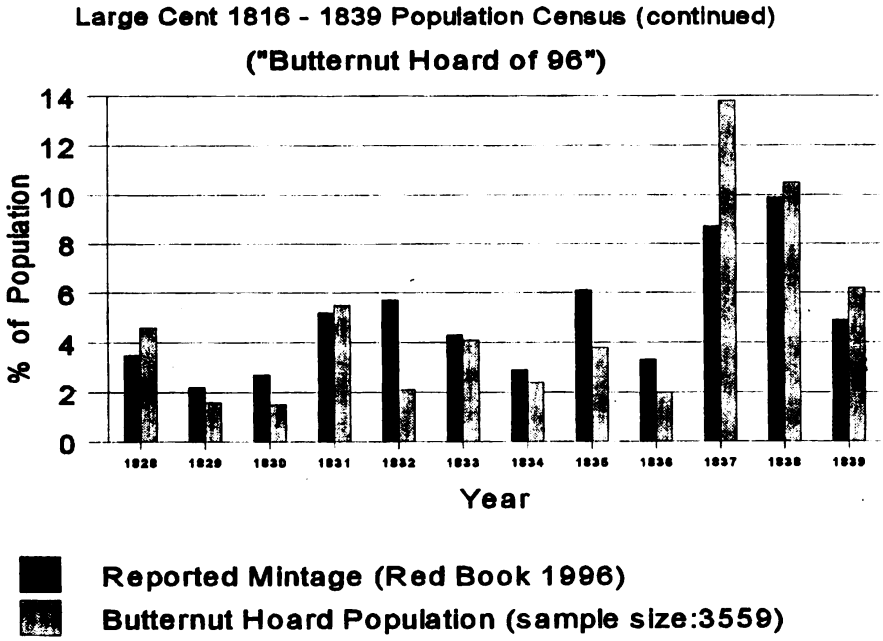
Graph by Chris Schwerdt

1816 - 1839 Large Cent Population Census Comparison				
Date	Quantity Found In Butternut Hoard	% Population of Butternut Hoard	Reported Red Book Mintage (in millions)	% Population of Red Book Mintage
1816	106	3.0	2.82	4.4
1817	97	2.7	3.95	6.2
1818	157	4.4	3.17	5.0
1819	165	4.6	2.67	4.2
1820	137	3.9	4.41	6.8
1821	70	2.0	0.39	0.6
1822	259	7.3	2.07	3.2
1823/4	117	3.3	1.26	2.0
1825	48	1.4	1.46	2.3
1826	110	3.1	1.52	2.4
1827	224	6.3	2.36	3.7
1828	163	4.6	2.26	3.5
1829	56	1.6	1.42	2.2
1830	54	1.5	1.71	2.7
1831	196	5.5	3.36	5.2
1832	73	2.1	3.62	5.7
1833	145	4.1	2.74	4.3
1834	87	2.4	1.86	2.9
1835	136	3.8	3.88	6.1
1836	72	2.0	2.11	3.3
1837	492	13.7	5.56	8.6
1838	373	10.5	6.37	9.8
1839	222	6.2	3.13	4.9
Totals	3,559	100%	64.1	100%

Relative Rarity As Predicted By Butternut Hoard Census (1816 - 1839 Large Cents)			
Ranking	Date	% Population of Butternut Hoard / % Population of Red Book Mintage	Comparative Rarity
1	1832	0.37	Rare
2	1817	0.44	Rare
3	1830	0.56	Rare
4	1820	0.57	Rare
5	1825	0.61	Rare
6	1836	0.61	Rare
7	1835	0.62	Rare
8	1816	0.68	Somewhat Rare
9	1829	0.73	Somewhat Rare
10	1834	0.83	Somewhat rare
11	1818	0.88	Someahat Rare
12	1833	0.95	Somewhat Rare
13	1831	1.06	Somewhat Common
14	1819	1.10	Somewhat Common
15	1838	1.11	Somewhat Common
16	1839	1.27	Somewhat Common
17	1826	1.29	Somewhat Common
18	1828	1.31	Somewhat Common
19	1837	1.59	Somewhat Common
20	1823/4	1.65	Somewhat Common
21	1827	1.70	Common
22	1822	2.28	Common
23	1821	3.33	Very Common

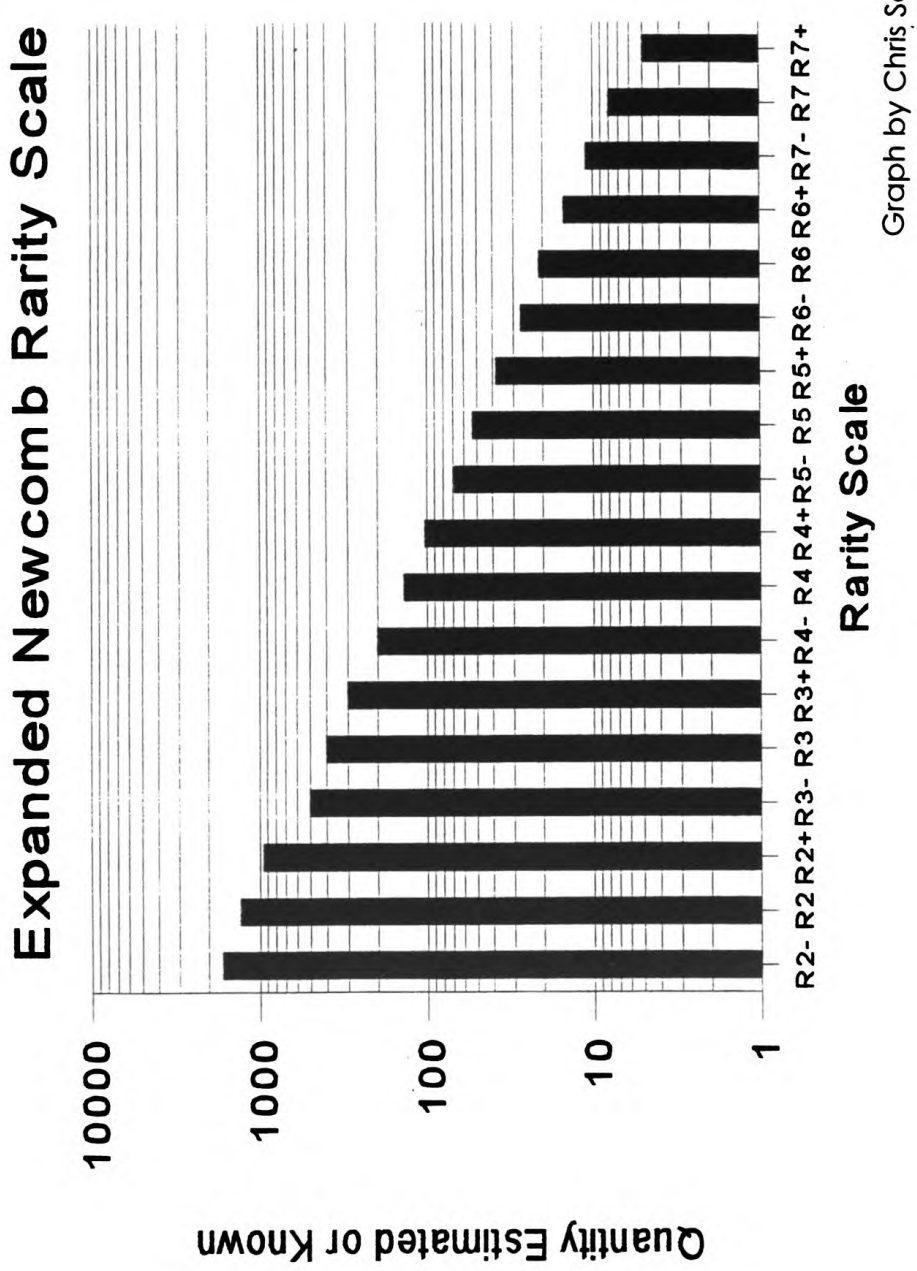


Graph by Chris Schwerdt



Graph by Chris Schwerdt

Expanded Newcomb Rarity Scale		
Rarity	Quantity Estimated or Known	Adjusted Rarity Scale For Butternut Population Census
R1	Over 2000 Estimated	(Not Used)
R2-	601 - 2000 Estimated	1650
R2	601 - 2000 Estimated	1300
R2+	601 - 2000 Estimated	950
R3-	201 - 600 Estimated	500
R3	201 - 600 Estimated	400
R3+	201 - 600 Estimated	300
R4-	76 - 200 Estimated	200
R4	76 - 200 Estimated	138
R4+	76 - 200 Estimated	103
R5-	61 - 75 Estimated	68
R5	46 - 60 Estimated	53
R5+	31 - 45 Estimated	38
R6-	25 -30 Known	27
R6	19 - 24 Known	21
R6+	13 - 18 Known	15
R7-	10 - 12 Known	11
R7	7 - 9 Known	8
R7+	4 - 6 Known	5
R8-	3 Known	3
R8	2 Known	2
R8+	1 Known	1



Graph by Chris Schwerdt

Butternut Hoard
Completed Portions of Population Census Study By Variety

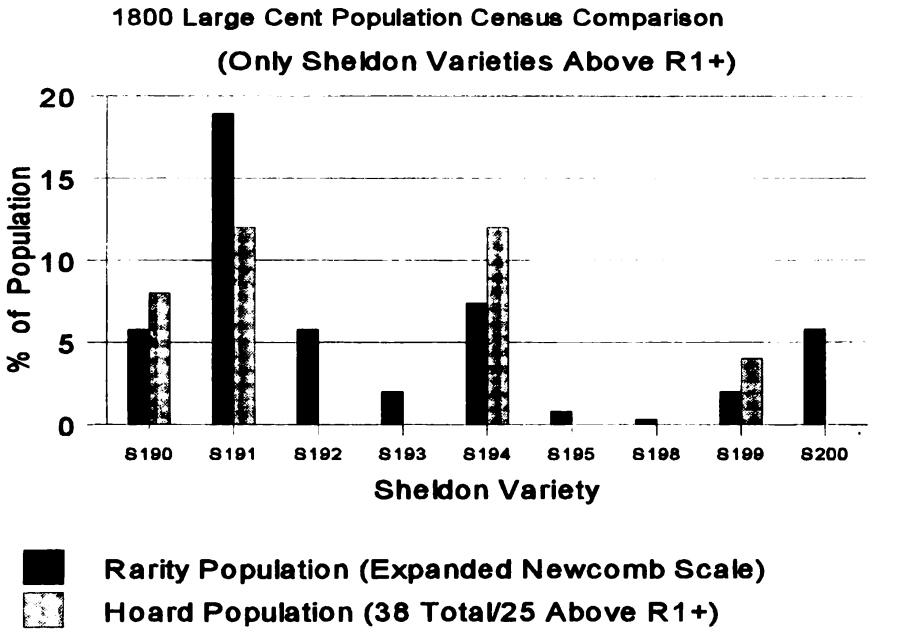
Year	Census Comparison Data (by variety)	Graph of Population Census Comparison	Relative Rarity Chart
1793			
1794			
1795			
1796			
1797			
1798			
1799			
1800	X	X	
1801	X	X	
1802	X	X	
1803	X	X	
1804			
1805			
1806			
1807	X	X	
1808			
1809			
1810	X	X	X
1811			
1812			
1813			
1814			
1816	X	X	X

Butternut Hoard
Completed Portions of Population Census Study By Variety

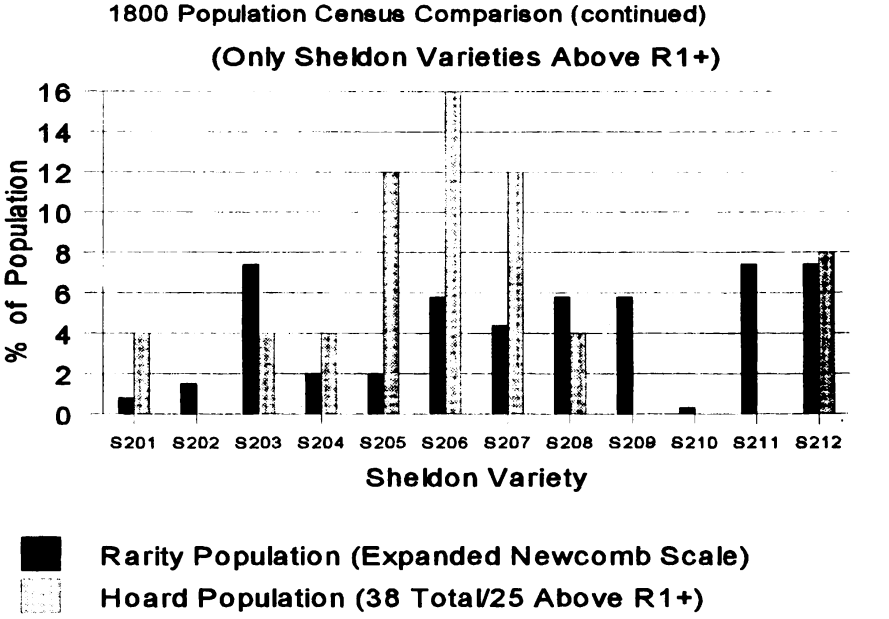
Year	Census Comparison Data (by variety)	Graph of Population Census Comparison	Relative Rarity Chart
1817	X	X	X
1818	X	X	X
1819	X	X	
1820	X	X	X
1821	X	X	
1822	X	X	X
1823	X	X	
1824	X	X	
1825	X	X	X
1826	X	X	X
1827	X	X	X
1828	X	X	X
1829	X	X	
1830	X	X	
1831	X	X	X
1832	X	X	
1833			
1834			
1835			
1836	X	X	X
1837	X	X	X
1838			
1839	X	X	X

1800 Large Cent Population Census Comparison					
Sheldon Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
S190	R3	400	2	5.8	8.0
S191	R2	1300	3	18.9	12.0
S192	R3	400	0	5.8	0
S193	R4	138	0	2.0	0
S194	R3-	500	3	7.4	12.0
S195	R5	53	0	0.8	0
S196	R1	*	6	*	*
S197	R1	*	7	*	*
S198	R6	21	0	0.3	0
S199	R4	138	1	2.0	4.0
S200	R3	400	0	5.8	0
S201	R5	53	1	0.8	4.0
S202	R4+	103	0	1.5	0
S203	R3-	500	1	7.4	4.0
S204	R4	138	1	2.0	4.0
S205	R4	138	3	2.0	12.0
S206	R3	400	4	5.8	16.0
S207	R3+	300	3	4.4	12.0
S208	R3	400	1	5.8	4.0
S209	R3	400	0	5.8	0
S210	R6	21	0	0.3	0
S211	R3-	500	0	7.4	0

1800 Large Cent Population Census Comparison					
S212	R3-	500	2	7.4	8.0
Totals		6,803	38 (25 Above R1+)	100%	100%

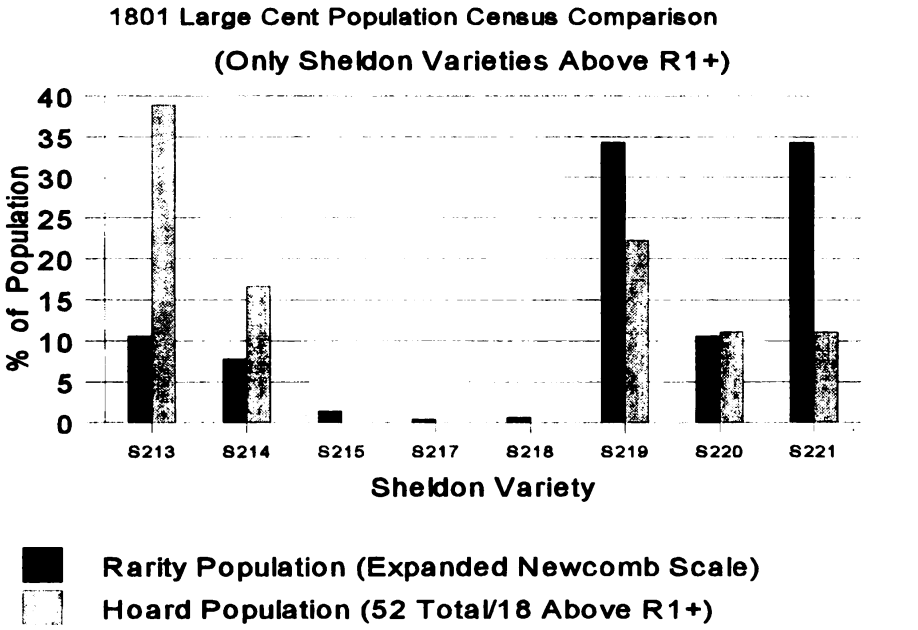


Graph by Chris Schwerdt



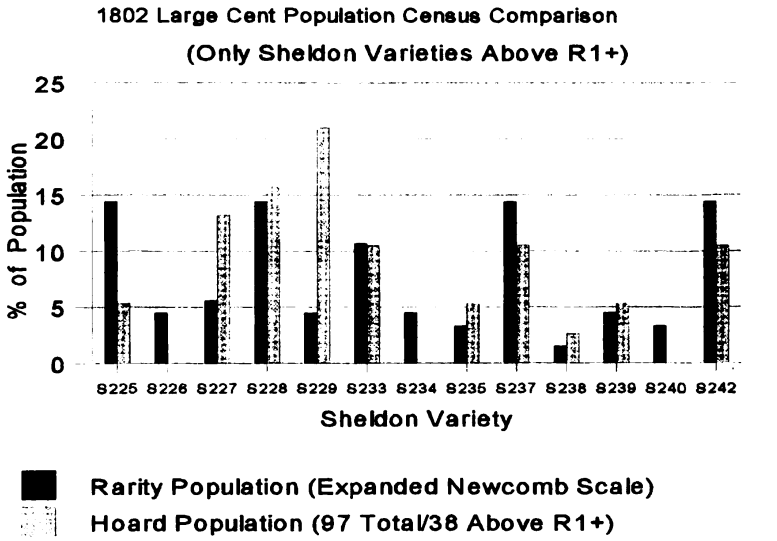
Graph by Chris Schwerdt

1801 Large Cent Population Census Comparison					
Sheldon Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
S213	R3	400	7	10.6	38.9
S214	R3+	300	3	7.8	16.7
S215	R5	53	0	1.4	0
S216	R1	*	8	*	*
S217	R6+	15	0	0.4	0
S218	R6	21	0	0.6	0
S219	R2	1300	4	34.3	22.2
S220	R3	400	2	10.6	11.1
S221	R2	1300	2	34.3	11.1
S222	R1	*	2	*	*
S223	R1	*	13	*	*
S224	R1	*	11	*	*
Totals		3,789	52 (18 Above R1+)	100%	100%



Graph by Chris Schwerdt

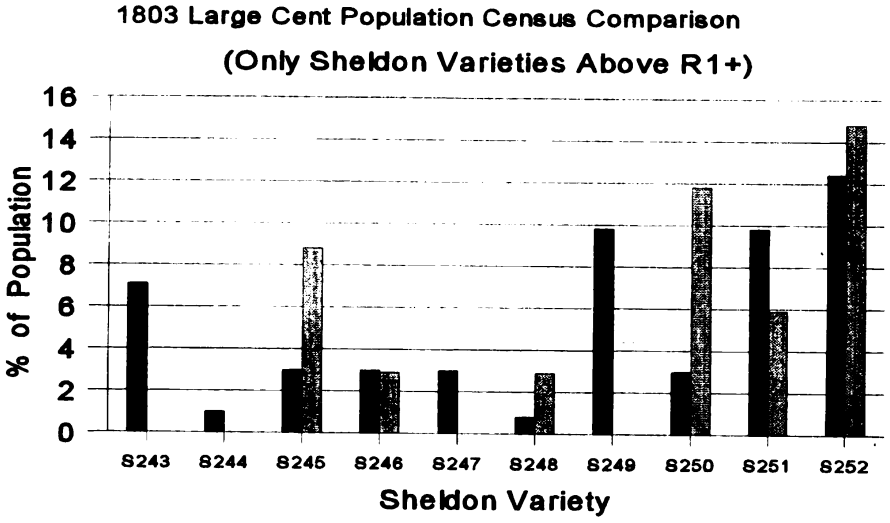
1802 Large Cent Population Census Comparison					
Sheldon Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
S225	R2	1300	2	14.4	5.3
S226	R3	400	0	4.5	0
S227	R3-	500	5	5.6	13.2
S228	R2	1300	6	14.4	15.8
S229	R3	400	8	4.5	21.0
S230	R1	*	9	*	*
S231	R1	*	19	*	*
S232	R1	*	13	*	*
S233	R2+	950	4	10.7	10.5
S234	R3	400	0	4.5	0
S235	R3+	300	2	3.3	5.3
S236	R1	*	8	*	*
S237	R2	1300	4	14.4	10.5
S238	R4	138	1	1.5	2.6
S239	R3	400	2	4.5	5.3
S240	R3+	300	0	3.3	0
S241	R1	*	10	*	*
S242	R2	1300	4	14.4	10.5
Totals		8,988	97 (38 Above R1+)	100%	100%



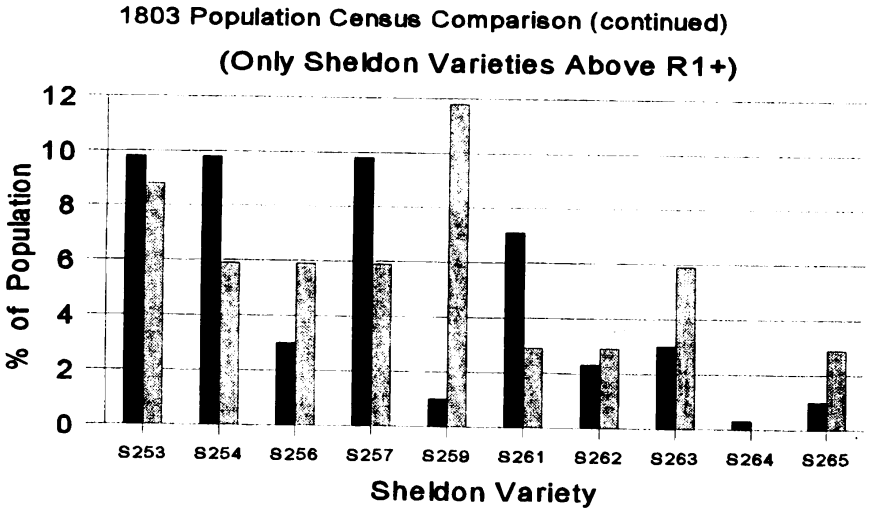
Graph by Chris Schwerdt

1803 Large Cent Population Census Comparison					
Sheldon Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
S243	R2+	950	0	7.1	0
S244	R4	138	0	1.0	0
S245	R3	400	3	3.0	8.8
S246	R3	400	1	3.0	2.9
S247	R3	400	0	3.0	0
S248	R4+	103	1	0.8	2.9
S249	R2	1300	0	9.8	0
S250	R3	400	4	3.0	11.8
S251	R2	1300	2	9.8	5.9
S252	R2-	1650	5	12.4	14.8
S253	R2	1300	3	9.8	8.8
S254	R2	1300	2	9.8	5.9
S255	R1	*	3	*	*
S256	R3	400	2	3.0	5.9
S257	R2	1300	2	9.8	5.9
S258	R1	*	6	*	*
S259	R4	138	4	1.0	11.8
S260	R1	*	11	*	*
S261	R2+	950	1	7.1	2.9
S262	R3+	300	1	2.3	2.9
S263	R3	400	2	3.0	5.9
S264	R5+	38	0	0.3	0

1803 Large Cent Population Census Comparison					
S265	R4	138	1	1.0	2.9
Totals		13,305	54 (34 Above R1+)	100%	100%

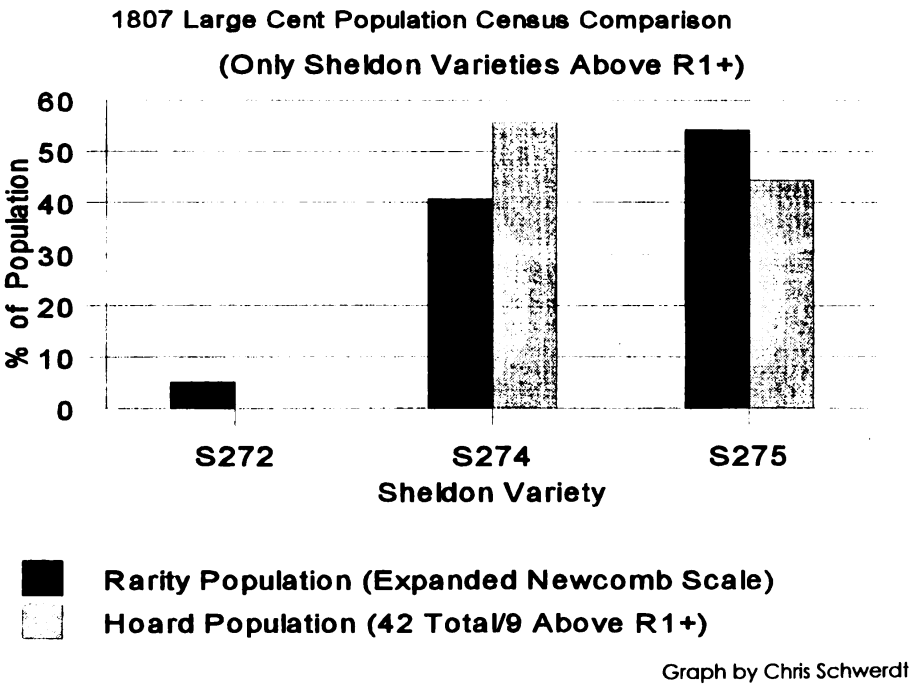


Graph by Chris Schwerdt



Graph by Chris Schwerdt

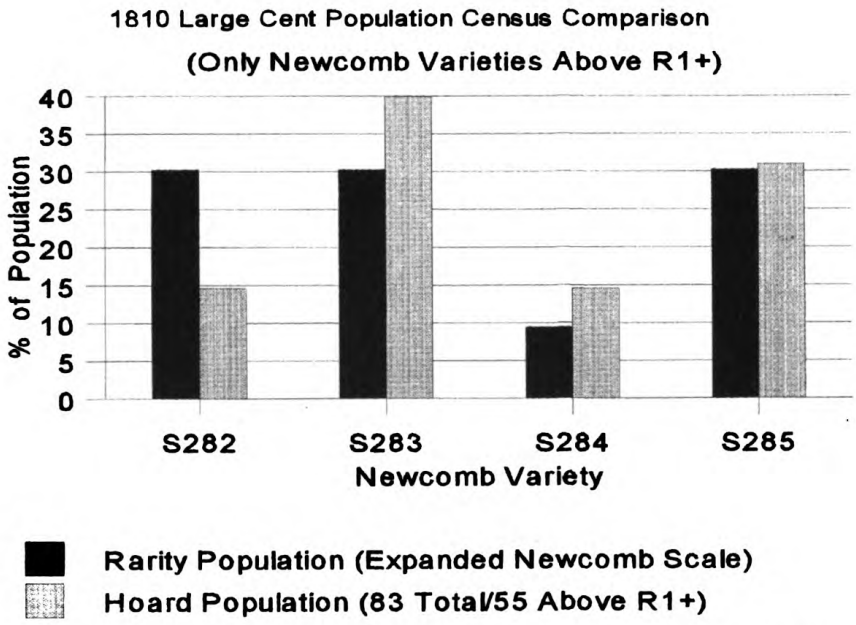
1807 Large Cent Population Census Comparison					
Sheldon Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
S271	R1	*	6	*	*
S272	R5+	38	0	5.1	0
S273	R1	*	20	*	*
S274	R3+	300	5	40.7	55.6
S275	R3	400	4	54.2	44.4
S276	R1	*	7	*	*
Totals		738	42 (9 Above R1+)	100%	100%



Graph by Chris Schwerdt

1810 Large Cent Population Census Comparison					
Sheldon Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
S281	R1	*	28	*	*
S282	R2	1300	8	30.2	14.6
S283	R2	1300	22	30.2	39.9
S284	R3	400	8	9.4	14.6
S285	R2	1300	17	30.2	30.9
Total		4,300	83 (55 Above R1+)	100%	100%

1810 Large Cent Relative Rarity As Predicted By Butternut Hoard Census (Varieties Above R1+)			
Ranking	Sheldon Reference	% Population of Butternut Hoard / % Population of Expanded Newcomb Scale	Comparative Rarity
1	S282	0.48	Rare
2	S285	1.02	Somewhat Common
3	S283	1.32	Somewhat Common
4	S284	1.55	Somewhat Common



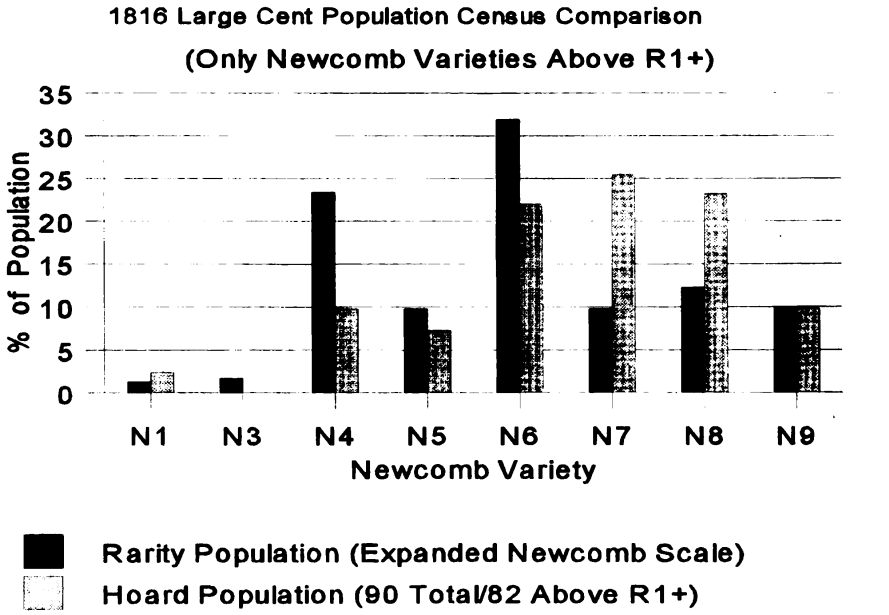
Graph by Chris Schwerdt

1816 Large Cent Population Census Comparison

Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R5	53	2	1.3	2.4
N2	R1	*	8	*	*
N3	R5-	68	0	1.7	0
N4	R2+	950	8	23.4	9.8
N5	R3	400	6	9.8	7.3
N6	R2	1300	18	31.9	22.0
N7	R3	400	21	9.8	25.5
N8	R3-	500	19	12.3	23.2
N9	R3	400	8	9.8	9.8
Totals		4,071	90 (82 Above R1+)	100%	100%

1816 Large Cent
Relative Rarity As Predicted By Butternut Hoard Census
(Varieties Above R1+)

Ranking	Newcomb Reference	% Population of Butternut Hoard / % Population of Expanded Newcomb Scale	Comparative Rarity
1	N3	0	Very Rare
2	N4	0.42	Rare
3	N6	0.69	Somewhat Rare
4	N5	0.75	Somewhat Rare
5	N9	1.00	Somewhat Common
6	N1	1.85	Common
7	N8	1.89	Common
8	N7	2.60	Very Common



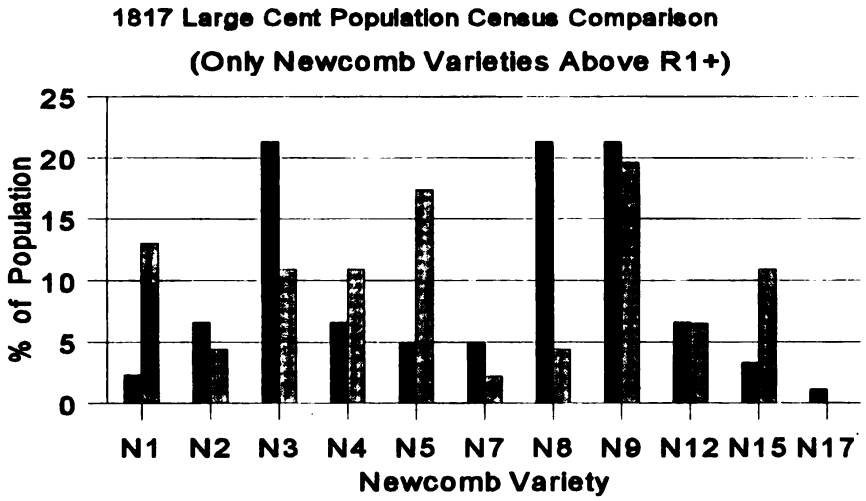
Graph by Chris Schwerdt

1817 Large Cent Population Census Comparison

Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R4	138	6	2.3	13.0
N2	R3	400	2	6.6	4.4
N3	R2	1300	5	21.3	10.9
N4	R3	400	5	6.6	10.9
N5	R3+	300	8	4.8	17.3
N6	R1	*	8	*	*
N7	R3+	300	1	4.8	2.2
N8	R2	1300	2	21.3	4.4
N9	R2	1300	9	21.3	19.5
N10	R1	*	13	*	*
N11	R1	*	8	*	*
N12	R3	400	3	6.6	6.5
N13	R1	*	4	*	*
N14	R1	*	3	*	*
N15	R4-	200	5	3.3	10.9
N16	R1+	*	15	*	*
N17	R5-	68	0	1.1	0
Totals		6,106	97 (46 above R1+)	100%	100%

1817 Large Cent
Relative Rarity As Predicted By Butternut Hoard Census
(Varieties Above R1+)

Ranking	Newcomb Reference	% Population of Butternut Hoard / % Population of Expanded Newcomb Scale	Comparative Rarity
1	N17	0	Very Rare
2	N8	0.21	Very Rare
3	N7	0.46	Rare
4	N3	0.51	Rare
5	N2	0.67	Somewhat Rare
6	N9	0.92	Somewhat Rare
7	N12	0.99	Somewhat Rare
8	N4	1.65	Somewhat Common
9	N15	3.30	Very Common
10	N5	3.60	Very Common
11	N1	5.65	Very Common



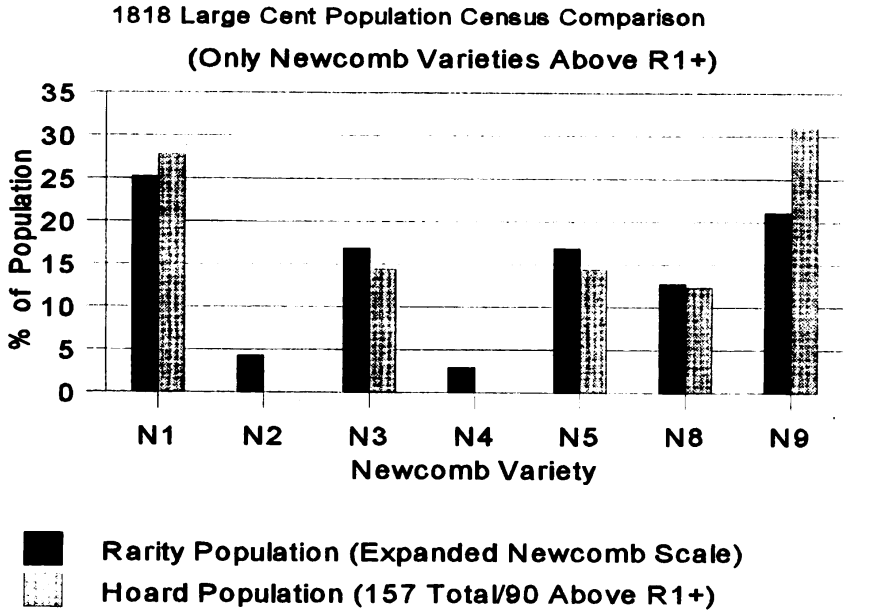
Graph by Chris Schwerdt

1818 Large Cent Population Census Comparison

Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R2+	950	25	25.2	27.8
N2	R4+	103	0	4.3	0
N3	R3	400	13	16.9	14.4
N4	R5-	68	0	2.9	0
N5	R3	400	13	16.9	14.4
N6	R1	*	30	*	*
N7	R1	*	23	*	*
N8	R3+	300	11	12.7	12.3
N9	R3-	500	28	21.1	31.1
N10	R1	*	14	*	*
Totals		2,371	157 (90 Above R1+)	100%	100%

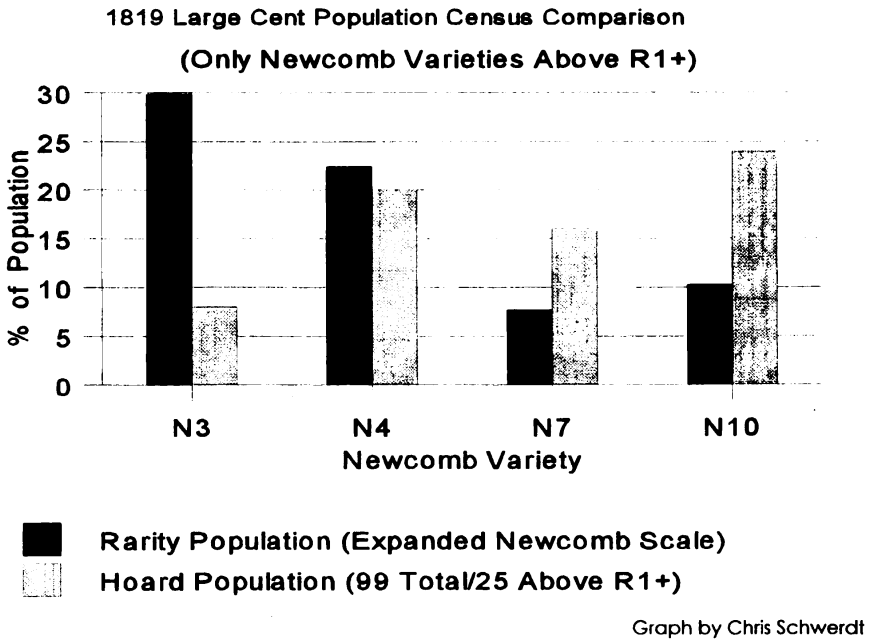
1818 Large Cent
Relative Rarity As Predicted By Butternut Hoard Census
(Varieties Above R1+)

Ranking	Newcomb Reference	% Population of Butternut Hoard / % Population of Expanded Newcomb Scale	Comparative Rarity
1	N2	0	Very Rare
2	N4	0	Very Rare
3	N5	0.85	Somewhat Rare
4	N3	0.85	Somewhat Rare
5	N8	0.97	Somewhat Rare
6	N1	1.10	Somewhat Common
7	N9	1.47	Somewhat Common



Graph by Chris Schwerdt

1819 Large Cent Population Census Comparison					
Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R1+	*	15	*	*
N2	R1	*	27	*	*
N3	R3	400	2	29.8	8.0
N4	R3	400	8	29.8	32.0
N5	R3+	300	5	22.4	20.0
N6	R1	*	16	*	*
N7	R4+	103	4	7.7	16.0
N8	R1	*	9	*	*
N9	R1	*	7	*	*
N10	R4	138	6	10.3	24.0
Totals		1,341	99 (25 Above R1+)	100%	100%



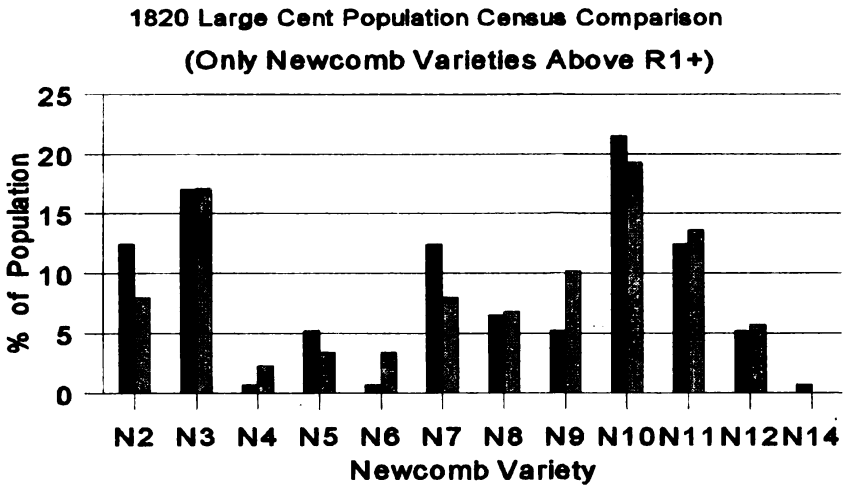
Graph by Chris Schwerdt

1820 Large Cent Population Census Comparison

Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R1	*	11	*	*
N2	R2+	950	7	12.4	8.1
N3	R2	1300	15	17.0	17.4
N4	R5	53	2	0.7	2.3
N5	R3	400	3	5.2	3.5
N6	R5	53	3	0.7	3.5
N7	R2+	950	7	12.4	8.1
N8	R3-	500	6	6.5	7.0
N9	R3	400	9	5.2	10.5
N10	R2-	1650	17	21.6	19.8
N11	R2+	950	12	12.4	14.0
N12	R3	400	5	5.2	5.8
N13	R1	*	5	*	*
N14	R5	53	0	0.7	0
N15	R1	*	2	*	*
Totals		7,659	104 (86 Above R1+)	100%	100%

1820 Large Cent
Relative Rarity As Predicted By Butternut Hoard Census
(Varieties Above R1+)

Ranking	Newcomb Reference	% Population of Butternut Hoard / % Population of Expanded Newcomb Scale	Comparative Rarity
1	N14	0	Very Rare
2	N2	0.65	Rare
3	N7	0.65	Rare
4	N5	0.67	Somewhat Rare
5	N10	0.92	Somewhat Rare
6	N3	1.02	Somewhat Common
7	N8	1.08	Somewhat Common
8	N12	1.12	Somewhat Common
9	N11	1.13	Somewhat Common
10	N9	2.02	Common
11	N4	3.29	Very Common
12	N6	5.00	Very Common



Graph by Chris Schwerdt

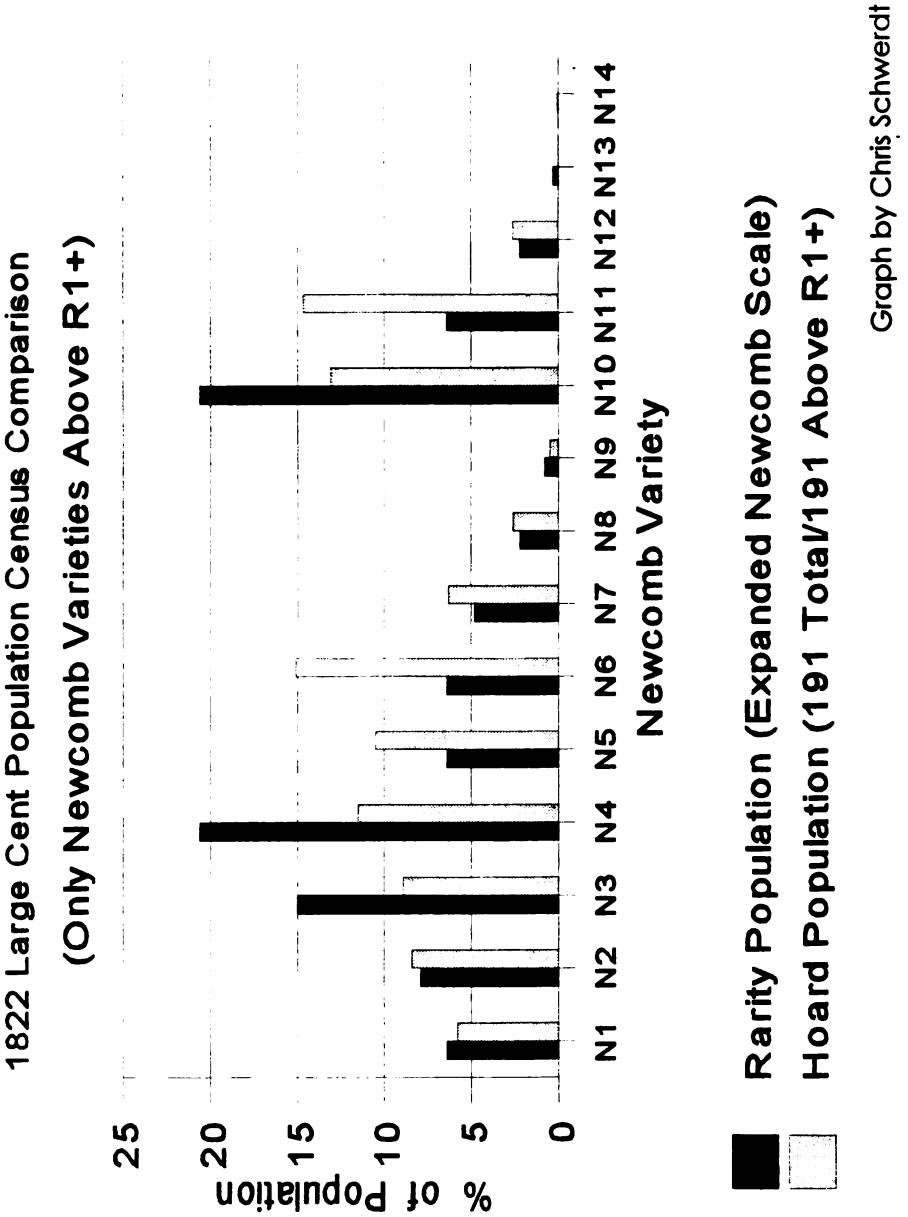
1821 Large Cent Population Census Comparison					
Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R1+	*	19	*	*
N2	R1	*	51	*	*
Totals		0	70	0	0

1822 Large Cent Population Census Comparison

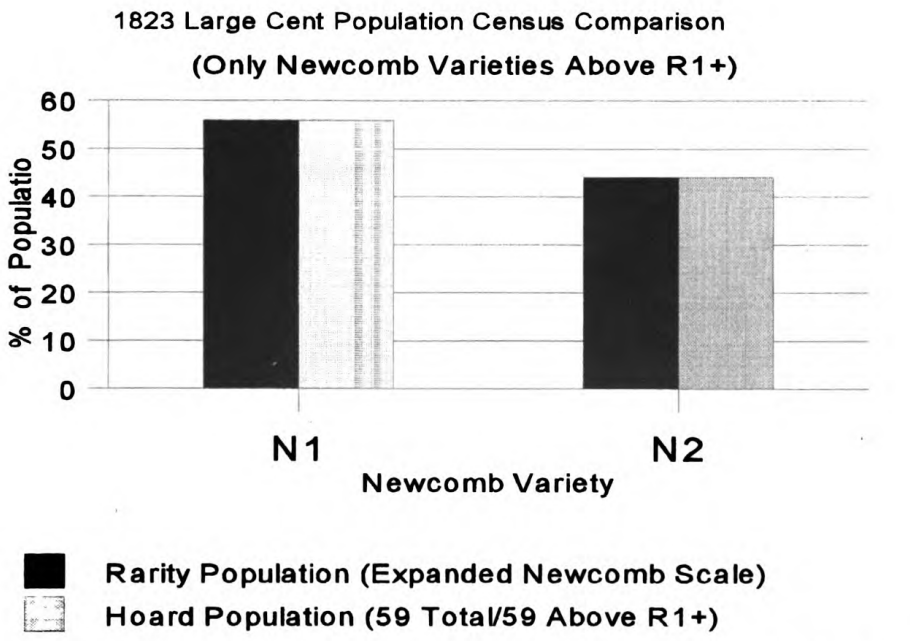
Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R3	400	11	6.4	5.8
N2	R3-	500	16	7.9	8.4
N3	R2+	950	17	15.0	8.9
N4	R2	1300	22	20.6	11.5
N5	R3	400	20	6.4	10.5
N6	R3	400	29	6.4	15.1
N7	R3+	300	12	4.8	6.3
N8	R4	138	5	2.2	2.6
N9	R5	53	1	0.8	0.5
N10	R2	1300	25	20.6	13.1
N11	R3	400	28	6.4	14.7
N12	R4	138	5	2.2	2.6
N13	R6	21	0	0.3	0
N14	R8-	3	0	0.04	0
Totals		6,303	191 (191 Above R1+)	100%	100%

1822 Large Cent
Relative Rarity As Predicted By Butternut Hoard Census
(Varieties Above R1+)

Ranking	Newcomb Reference	% Population of Butternut Hoard / % Population of Expanded Newcomb Scale	Comparative Rarity
1	N14	0	Very Rare
2	N13	0	Very Rare
3	N4	0.56	Rare
4	N3	0.59	Rare
5	N9	0.63	Rare
6	N10	0.64	Rare
7	N1	0.91	Somewhat Rare
8	N2	1.06	Somewhat Common
9	N8	1.18	Somewhat Common
10	N12	1.18	Somewhat Common
11	N7	1.31	Somewhat Common
12	N5	1.64	Somewhat Common
13	N11	2.30	Common
14	N6	2.36	Very Common

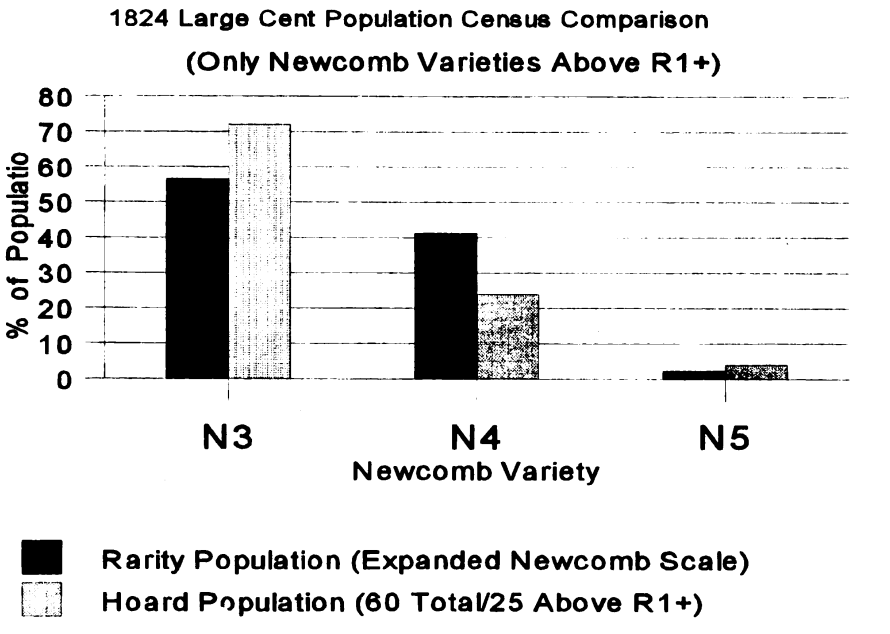


1823 Large Cent Population Census Comparison					
Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R2-	1650	33	55.9	55.9
N2	R2	1300	26	44.1	44.1
Totals		2,950	59 (59 Above R1+)	100%	100%



Graph by Chris Schwerdt

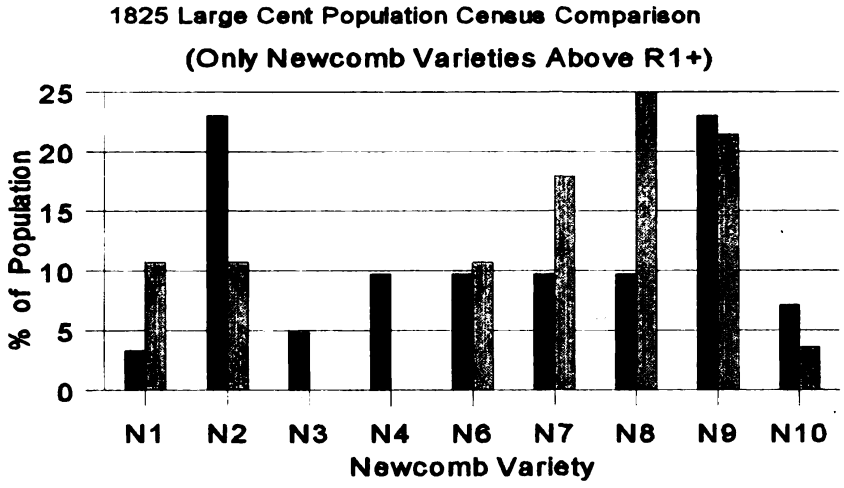
1824 Large Cent Population Census Comparison					
Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R1+	*	7	*	*
N2	R1	*	29	*	*
N3	R2	1300	18	56.4	72.0
N4	R2+	950	6	41.3	24.0
N5	R5	53	1	2.3	4.0
Totals		2,303	60 (25 Above R1+)	100%	100%



Graph by Chris Schwerdt

1825 Large Cent Population Census Comparison					
Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R4	138	3	3.3	10.7
N2	R2+	950	3	23.0	10.7
N3	R4-	200	0	4.8	0
N4	R3	400	0	9.7	0
N6	R3	400	3	9.7	10.7
N7	R3	400	5	9.7	17.9
N8	R3	400	7	9.7	25.0
N9	R2+	950	6	23.0	21.4
N10	R3+	300	1	7.1	3.6
Total		4,138	28 (28 Above R1+)	100%	100%

1825 Large Cent Relative Rarity As Predicted By Butternut Hoard Census (Varieties Above R1+)			
Ranking	Newcomb Reference	% Population of Butternut Hoard / % Population of Expanded Newcomb Scale	Comparative Rarity
1	N3	0	Very Rare
2	N4	0	Very Rare
3	N2	0.47	Rare
4	N10	0.51	Rare
5	N9	0.93	Somewhat Rare
6	N6	1.10	Somewhat Common
7	N7	1.85	Common
8	N8	2.58	Very Common
9	N1	3.24	Very Common

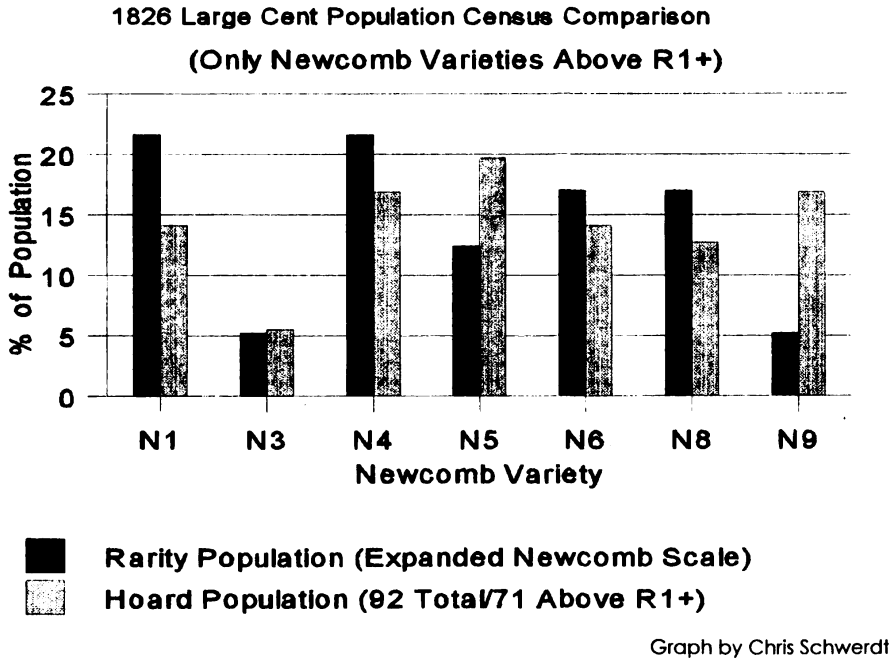


Graph by Chris Schwerdt

1826 Large Cent Population Census Comparison

Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R2-	1650	10	21.6	14.1
N3	R3	400	4	5.2	5.6
N4	R2-	1650	12	21.6	16.9
N5	R2+	950	14	12.4	19.7
N6	R2	1300	10	17.0	14.1
N7	R1	*	21	*	*
N8	R2	1300	9	17.0	12.7
N9	R3	400	12	5.2	16.9
Total		7,650	92 (71 Above R1+)	100%	100%

1826 Large Cent Relative Rarity As Predicted By Butternut Hoard Census (Varieties Above R1+)			
Ranking	Newcomb Reference	% Population of Butternut Hoard / % Population of Expanded Newcomb Scale	Comparative Rarity
1	N1	0.65	Rare
2	N8	0.75	Somewhat Rare
3	N4	0.78	Somewhat Rare
4	N6	0.83	Somewhat Rare
5	N3	1.08	Somewhat Common
6	N5	1.59	Somewhat Common
7	N9	3.25	Very Common



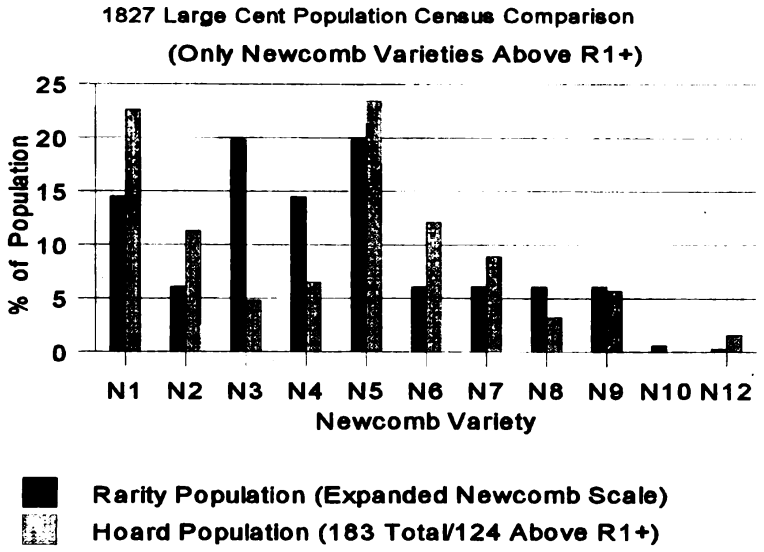
Graph by Chris Schwerdt

1827 Large Cent Population Census Comparison

Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R2+	950	28	14.5	22.6
N2	R3	400	14	6.1	11.3
N3	R2	1300	6	19.8	4.8
N4	R2+	950	8	14.5	6.5
N5	R2	1300	29	19.8	23.3
N6	R3	400	15	6.1	12.1
N7	R3	400	11	6.1	8.9
N8	R3	400	4	6.1	3.2
N9	R3	400	7	6.1	5.7
N10	R5+	38	0	0.6	0
N11	R1	*	59	*	*
N12	R6	21	2	0.3	1.6
Totals		6,559	183 (124 Above R1+)	100%	100%

1827 Large Cent
Relative Rarity As Predicted By Butternut Hoard Census
(Varieties Above R1+)

Ranking	Newcomb Reference	% Population of Butternut Hoard / % Population of Expanded Newcomb Scale	Comparative Rarity
1	N10	0	Very Rare
2	N3	0.24	Very Rare
3	N4	0.45	Rare
4	N8	0.53	Rare
5	N9	0.93	Somewhat Rare
6	N5	1.26	Somewhat Common
7	N7	1.46	Somewhat Common
8	N1	1.56	Somewhat Common
9	N2	1.85	Common
10	N6	1.98	Common
11	N12	5.33	Very Common



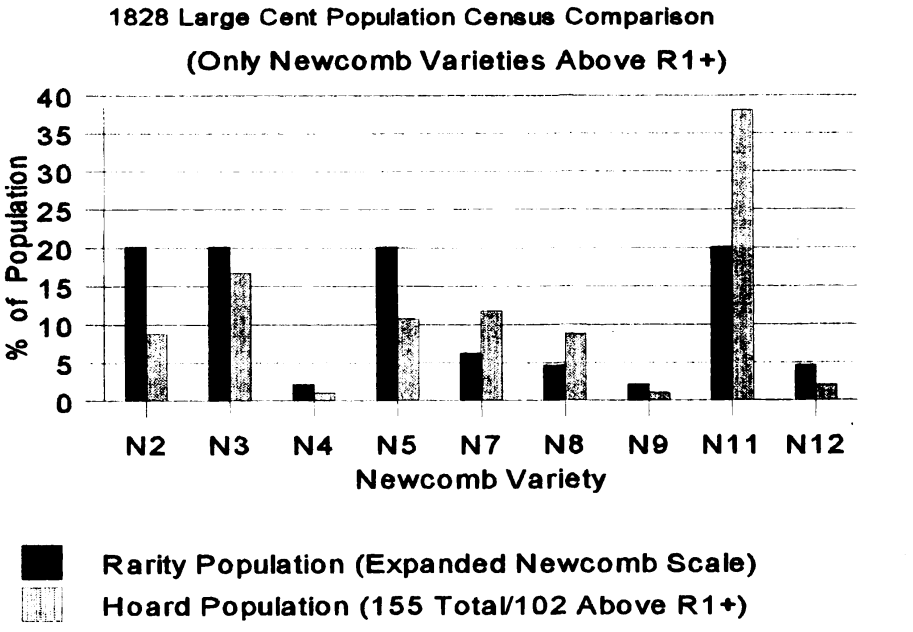
Graph by Chris Schwerdt

1828 Large Cent Population Census Comparison

Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R1	*	17	*	*
N2	R2	1300	9	20.1	8.8
N3	R2	1300	17	20.1	16.7
N4	R4	138	1	2.1	1.0
N5	R2	1300	11	20.1	10.8
N6	R1	*	26	*	*
N7	R3	400	12	6.2	11.8
N8	R3+	300	9	4.6	8.8
N9	R4	138	2	2.1	2.0
N10	R1	*	10	*	*
N11	R2	1300	39	20.1	38.1
N12	R3+	300	2	4.6	2.0
Total		6,476	155 (102 Above R1+)	100%	100%

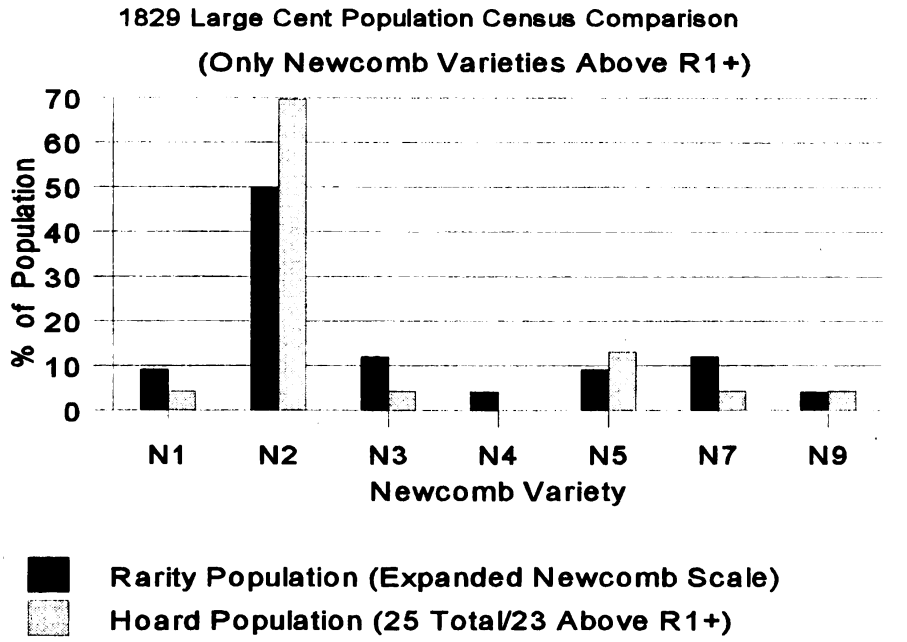
1828 Large Cent
Relative Rarity As Predicted By Butternut Hoard Census
(Varieties Above R1+)

Ranking	Newcomb Reference	% Population of Butternut Hoard / % Population of Expanded Newcomb Scale	Comparative Rarity
1	N2	0.44	Rare
2	N12	0.44	Rare
3	N4	0.48	Rare
4	N5	0.54	Rare
5	N3	0.83	Somewhat Rare
6	N9	0.95	Somewhat Rare
7	N7	1.90	Common
8	N11	1.90	Common
9	N8	1.91	Common



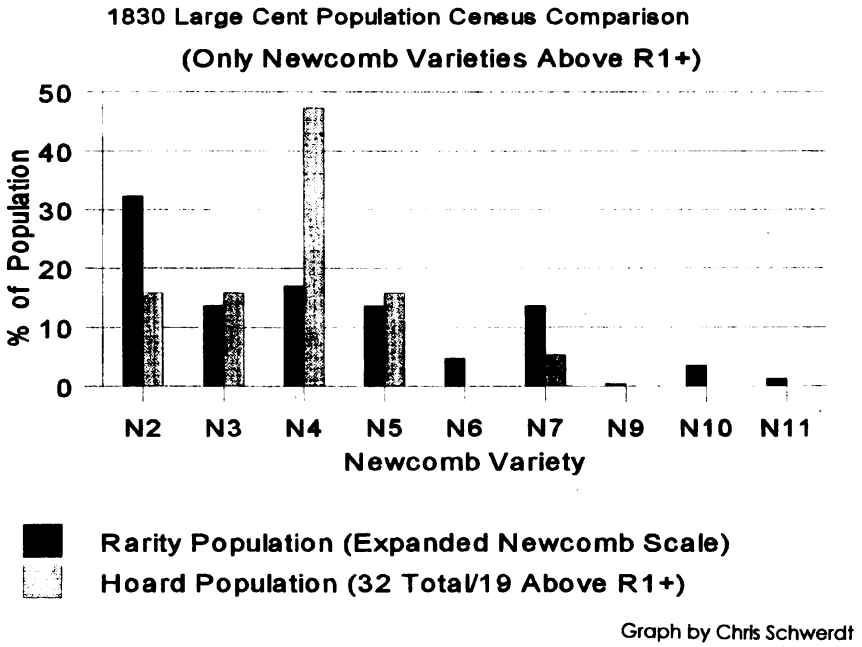
Graph by Chris Schwerdt

1829 Large Cent Population Census Comparison					
Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R3+	300	1	9.1	4.3
N2	R2-	1650	16	49.6	69.7
N3	R3	400	1	12.0	4.3
N4	R4	138	0	4.1	0
N5	R3+	300	3	9.1	13.1
N6	R1	*	0	*	*
N7	R3	400	1	12.0	4.3
N8	R1	*	2	*	*
N9	R4	138	1	4.1	4.3
Totals		3,326	25 (23 Above R1+)	100%	100%



Graph by Chris Schwerdt

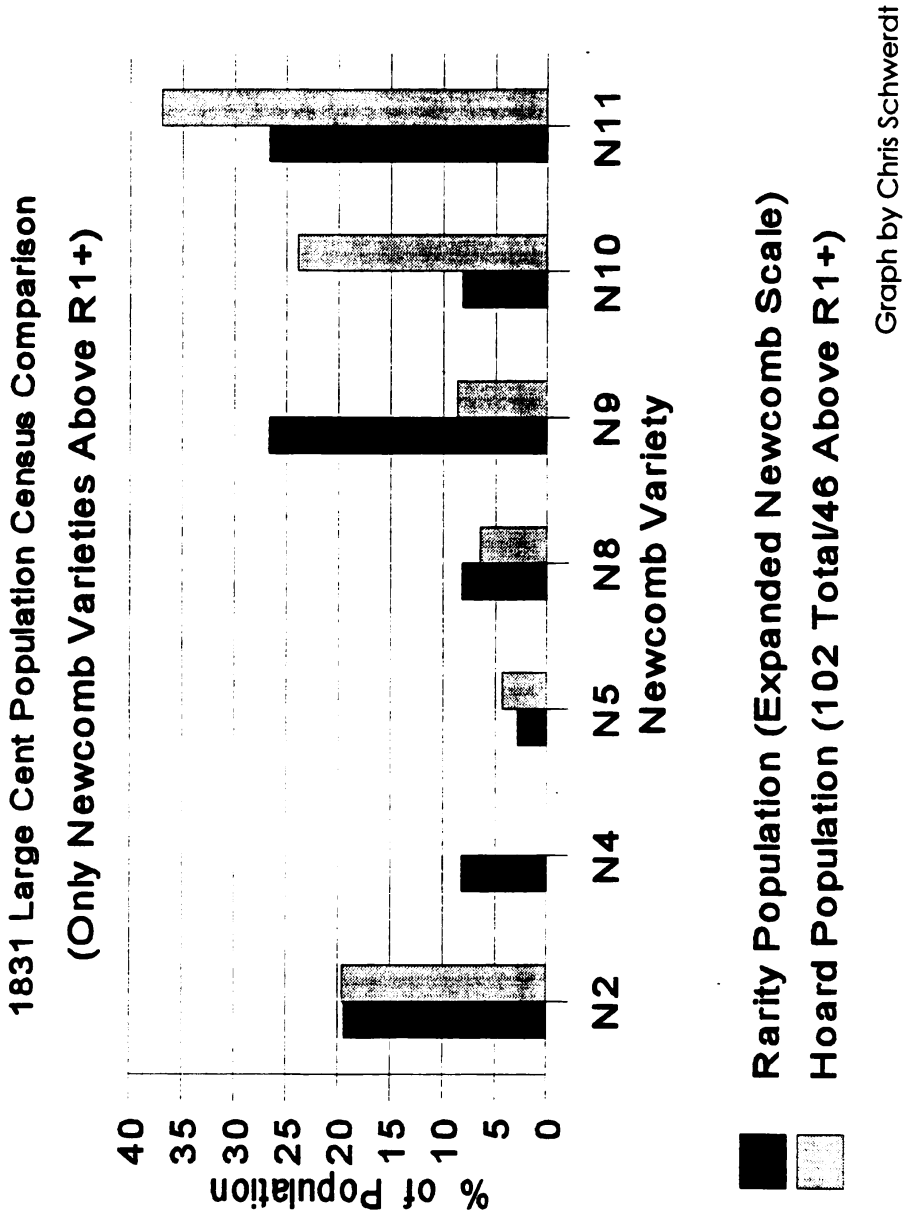
1830 Large Cent Population Census Comparison					
Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R1	*	4	*	*
N2	R2+	950	3	32.3	15.8
N3	R3	400	3	13.6	15.8
N4	R3-	500	9	17.0	47.3
N5	R3	400	3	13.6	15.8
N6	R4	138	0	4.7	0
N7	R3	400	1	13.6	5.3
N8	R1	*	9	*	*
N9	R7-	11	0	0.4	0
N10	R4+	103	0	3.5	0
N11	R5+	38	0	1.3	0
Totals		2,940	32 (19 Above R1+)	100%	100%



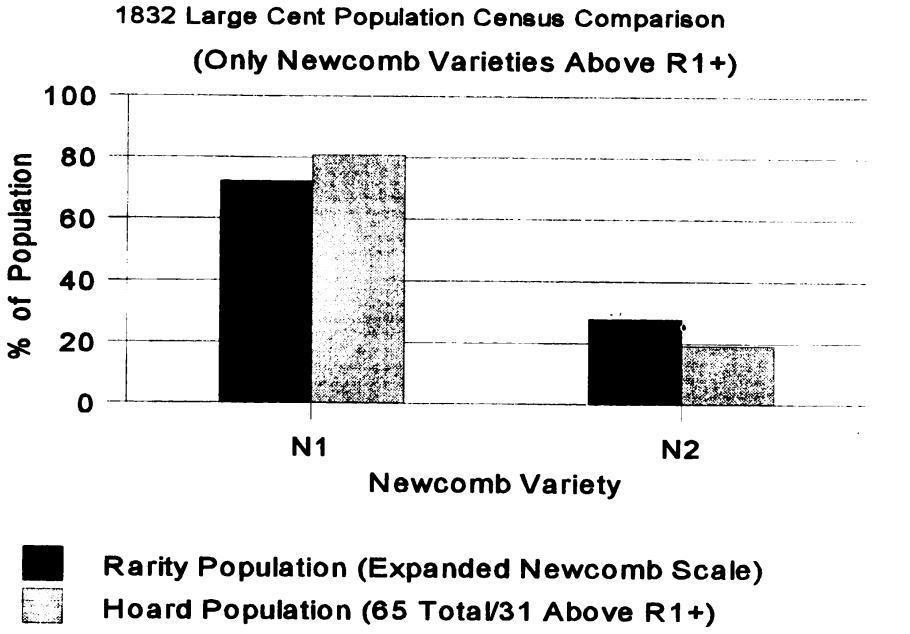
Graph by Chris Schwerdt

1831 Large Cent Population Census Comparison					
Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R1	*	14	*	*
N2	R2+	950	9	19.4	19.6
N3	R1	*	8	*	*
N4	R3	400	0	8.2	0
N5	R4	138	2	2.8	4.3
N6	R1	*	25	*	*
N7	R1	*	8	*	*
N8	R3	400	3	8.2	6.5
N9	R2	1300	4	26.6	8.7
N10	R3	400	11	8.2	23.9
N11	R2	1300	17	26.6	37.0
N12	R1	*	1	*	*
Totals		4,888	102 (46 Above R1+)	100%	100%

1831 Large Cent Relative Rarity As Predicted By Butternut Hoard Census (Varieties Above R1+)			
Ranking	Newcomb Reference	% Population of Butternut Hoard / % Population of Expanded Newcomb Scale	Comparative Rarity
1	N4	0	Very Rare
2	N9	0.33	Rare
3	N8	0.79	Somewhat Rare
4	N2	1.01	Somewhat Common
5	N11	1.39	Somewhat Common
6	N5	1.54	Somewhat Common
7	N10	2.91	Very Common



1832 Large Cent Population Census Comparison					
Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R2	1300	25	72.2	80.7
N2	R3-	500	6	27.8	19.3
N3	R1	*	34	*	*
Totals		1,800	65 (31 Above R1+)	100%	100%



Graph by Chris Schwerdt

BUTTERNUT HOARD OF 1996 BUTTERNUT HOARD OF 1996

Large Cents of 1833

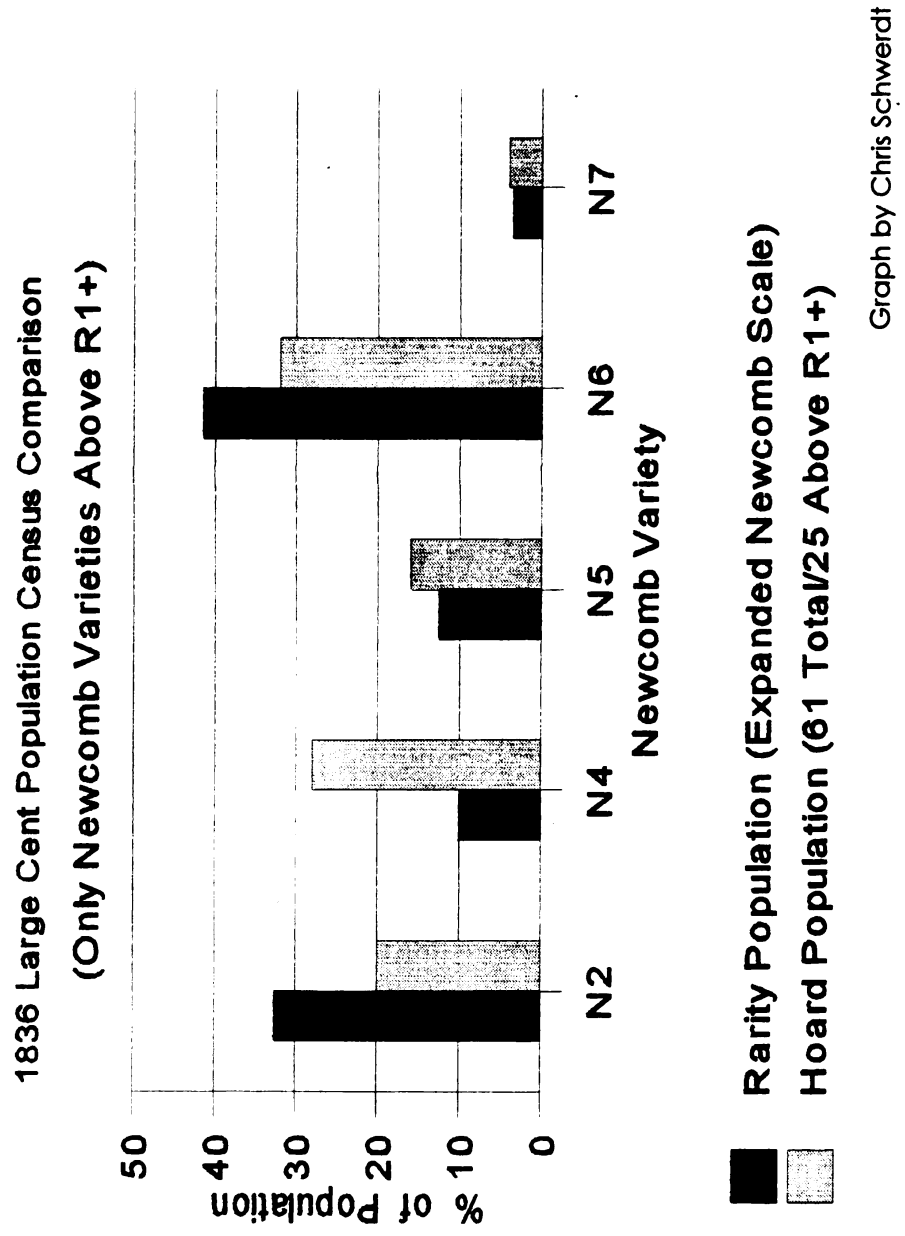
Newcomb 1	34
Newcomb 2	14
Newcomb 3	26
Newcomb 4	4
Newcomb 5	34
Newcomb 6	21

Large Cents of 1835

Newcomb 1	10
Newcomb 2	4
Newcomb 3	3
Newcomb 4	0
Newcomb 5	7
Newcomb 6	12
Newcomb 7	45
Newcomb 8	4
Newcomb 9	0
Newcomb 10	0
Newcomb 11	0
Newcomb 12	1
Newcomb 13	1
Newcomb 14	13
Newcomb 15	12
Newcomb 16	5

1836 Large Cent Population Census Comparison					
Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R1+	*	18	*	*
N2	R2	1300	5	32.6	20.0
N3	R1	*	18	*	*
N4	R3	400	7	10.0	28.0
N5	R3-	500	4	12.5	16.0
N6	R2-	1650	8	41.4	32.0
N7	R4	138	1	3.5	4.0
Total		3,988	61 (25 Above R1+)	100%	100%

1836 Large Cent Relative Rarity As Predicted By Butternut Hoard Census (Varieties Above R1+)			
Ranking	Newcomb Reference	% Population of Butternut Hoard / % Population of Expanded Newcomb Scale	Comparative Rarity
1	N2	0.61	Rare
2	N6	0.77	Somewhat Rare
3	N7	1.14	Somewhat Common
4	N5	1.28	Somewhat Common
5	N4	2.80	Very Common



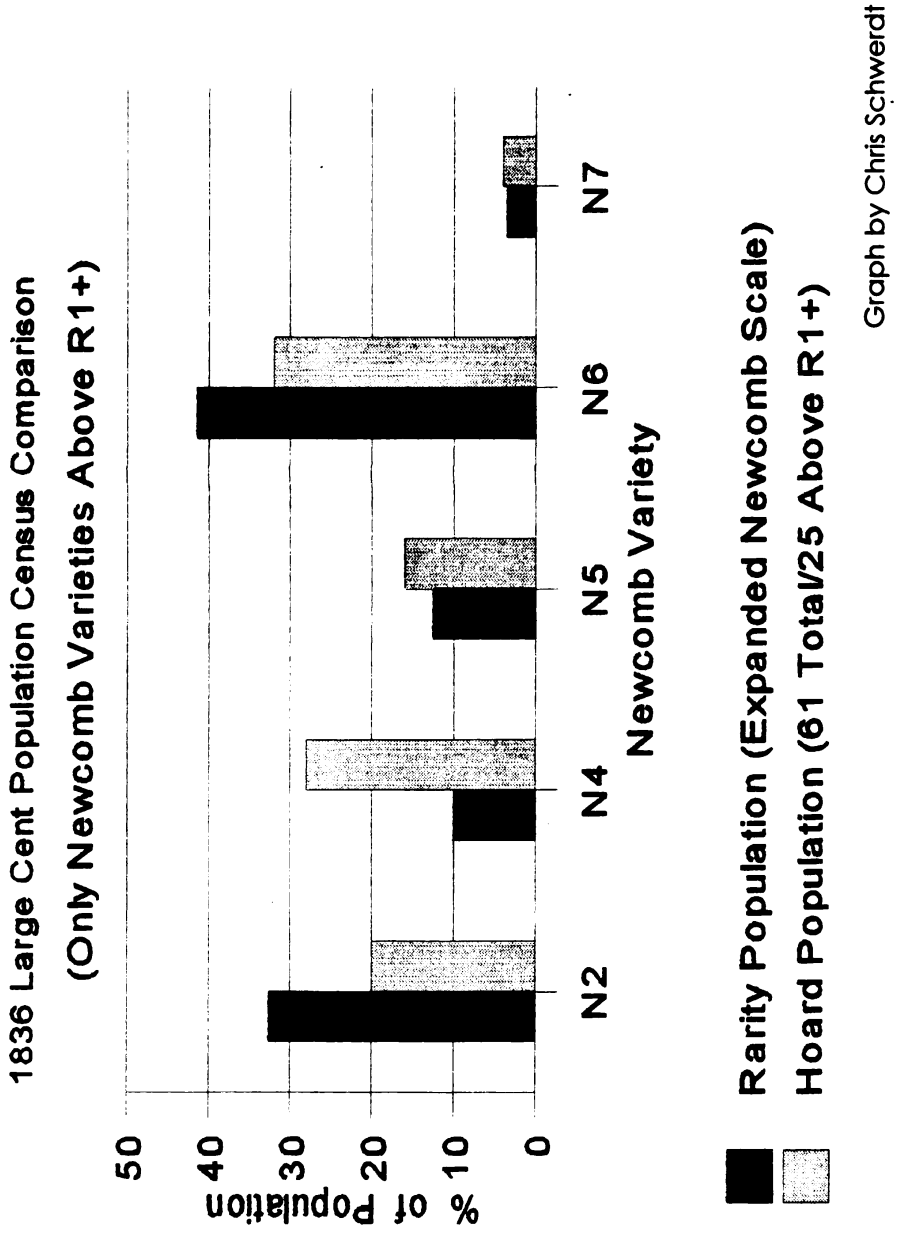
Graph by Chris Schwerdt

1837 Large Cent Population Census Comparison

Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R3	400	6	4.7	3.5
N2	R2	1300	7	15.2	4.1
N3	R1	*	58	*	*
N4	R2	1300	22	15.2	12.9
N5	R2	1300	41	15.2	24.1
N6	R2-	1650	33	19.1	19.4
N7/8	R1	*	56	*	*
N9	R1	*	50	*	*
N10	R1	*	65	*	*
N11	R1	*	46	*	*
N12	R3-	500	29	5.8	17.1
N13	R2+	950	4	11.1	2.4
N14	R3-	500	14	5.8	8.2
N15	R4	138	4	1.6	2.4
N16	R3	400	8	4.7	4.7
N17	R4	138	2	1.6	1.2
Totals		8,576	445 (170 Above R1+)	100%	100%

1837 Large Cent
Relative Rarity As Predicted By Butternut Hoard Census
(Varieties Above R1+)

Ranking	Newcomb Reference	% Population of Butternut Hoard / % Population of Expanded Newcomb Scale	Comparative Rarity
1	N13	0.22	Very Rare
2	N2	0.27	Very Rare
3	N1	0.75	Somewhat Rare
4	N17	0.75	Somewhat Rare
5	N4	0.85	Somewhat Rare
6	N16	1.00	Somewhat Common
7	N6	1.02	Somewhat Common
8	N14	1.41	Somewhat Common
9	N15	1.50	Somewhat Common
10	N5	1.59	Somewhat Common
11	N12	2.95	Very Common

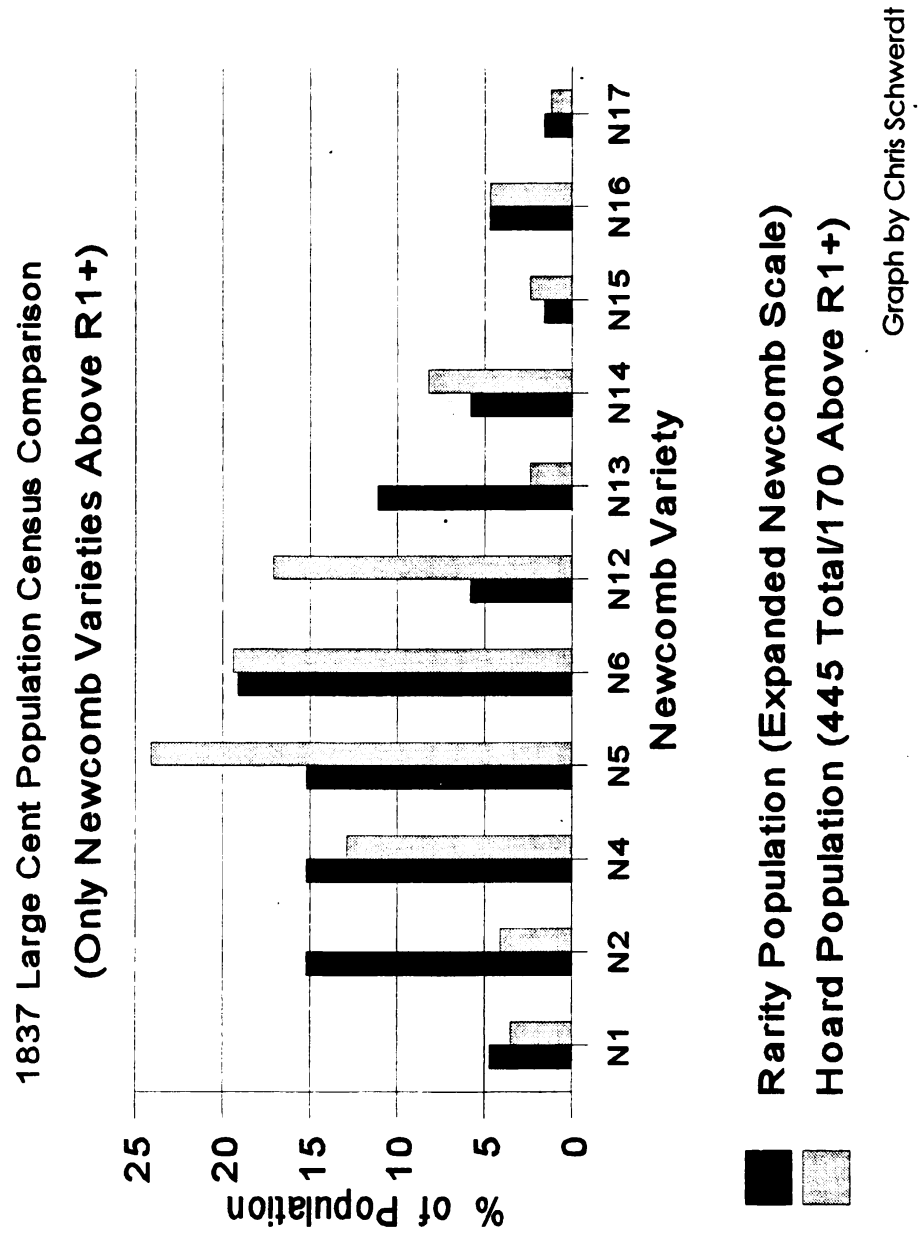


1837 Large Cent Population Census Comparison

Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R3	400	6	4.7	3.5
N2	R2	1300	7	15.2	4.1
N3	R1	*	58	*	*
N4	R2	1300	22	15.2	12.9
N5	R2	1300	41	15.2	24.1
N6	R2-	1650	33	19.1	19.4
N7/8	R1	*	56	*	*
N9	R1	*	50	*	*
N10	R1	*	65	*	*
N11	R1	*	46	*	*
N12	R3-	500	29	5.8	17.1
N13	R2+	950	4	11.1	2.4
N14	R3-	500	14	5.8	8.2
N15	R4	138	4	1.6	2.4
N16	R3	400	8	4.7	4.7
N17	R4	138	2	1.6	1.2
Totals		8,576	445 (170 Above R1+)	100%	100%

1837 Large Cent
Relative Rarity As Predicted By Butternut Hoard Census
(Varieties Above R1+)

Ranking	Newcomb Reference	% Population of Butternut Hoard / % Population of Expanded Newcomb Scale	Comparative Rarity
1	N13	0.22	Very Rare
2	N2	0.27	Very Rare
3	N1	0.75	Somewhat Rare
4	N17	0.75	Somewhat Rare
5	N4	0.85	Somewhat Rare
6	N16	1.00	Somewhat Common
7	N6	1.02	Somewhat Common
8	N14	1.41	Somewhat Common
9	N15	1.50	Somewhat Common
10	N5	1.59	Somewhat Common
11	N12	2.95	Very Common



BUTTERNUT HOARD OF 1996

Large Cents of 1838

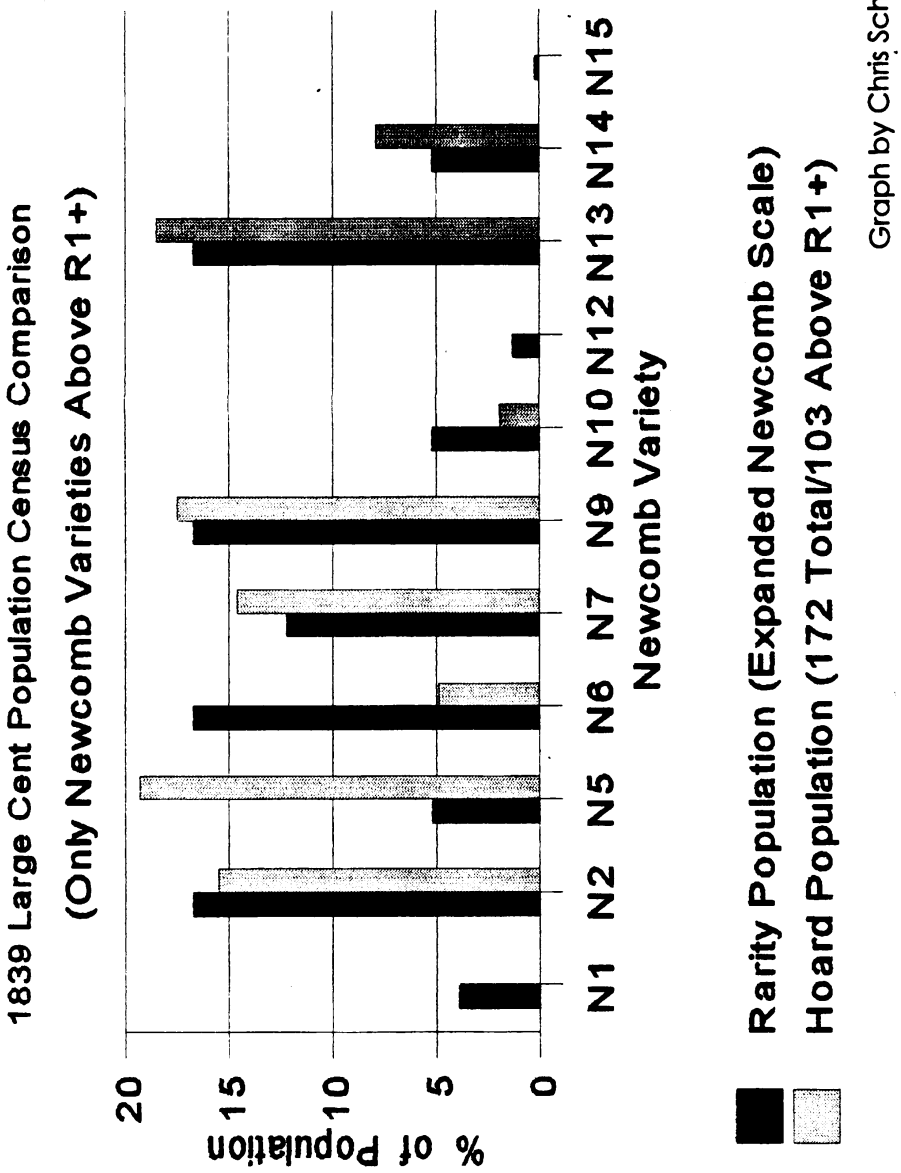
Newcomb 1	8
Newcomb 2	16
Newcomb 3	8
Newcomb 4	12
Newcomb 5	5
Newcomb 6	17
Newcomb 7	5
Newcomb 8	3
Newcomb 9	10
Newcomb 10	4
Newcomb 11	1
Newcomb 12	1
Newcomb 13	1
Newcomb 14	0
Newcomb 15	0

1839 Large Cent Population Census Comparison

Newcomb Reference	Rarity (Noyes)	Population Size (Expanded Newcomb Scale)	Quantity Attributed (Butternut Hoard)	% Population (Expanded Newcomb Scale Above R1+)	% Butternut Hoard Population Above R1+
N1	R3+	300	0	3.9	0
N2	R2	1300	16	16.7	15.5
N3	R1	*	17	*	*
N4	R1	*	14	*	*
N5	R3	400	20	5.2	19.3
N6	R2	1300	5	16.7	4.9
N7	R2+	950	15	12.2	14.6
N8	R1	*	18	*	*
N9	R2	1300	18	16.7	17.5
N10	R3	400	2	5.2	1.9
N11	R1	*	20	*	*
N12	R4+	103	0	1.3	0
N13	R2	1300	19	16.7	18.5
N14	R3	400	8	5.2	7.8
N15	R6+	15	0	0.2	0
Total		7,768	172 (103 Above R1+)	100%	100%

1839 Large Cent
Relative Rarity As Predicted By Butternut Hoard Census
(Varieties Above R1+)

Ranking	Newcomb Reference	% Population of Butternut Hoard / % Population of Expanded Newcomb Scale	Comparative Rarity
1	N1	0	Very Rare
2	N12	0	Very Rare
3	N15	0	Very Rare
4	N6	0.29	Very Rare
5	N10	0.37	Rare
6	N2	0.93	Somewhat Rare
7	N9	1.05	Somewhat Common
8	N13	1.11	Somewhat Common
9	N7	1.20	Somewhat Common
10	N14	1.50	Somewhat Common
11	N5	3.71	Very Common



Graph by Chris Schwerdt

Restriking the Issues
The Large Cent Restrikes of 1804, 1810, and 1823

Mark Borckardt and William Metropolis

Coinage of the Americas Conference
at the American Numismatic Society, New York

November 9, 1996

[Editor's Note: The principal author of this article is Mark Borckardt; William Metropolis provided the important information on chemical composition.]

> Although it is somewhat out of our province to treat of counterfeit coins, it [is] necessary to mention another counterfeit which has been made possibly under the supervision of the U.S. Mint officials at Philadelphia, within the past twenty years; but *who* influenced the manufacture of this disgraceful fraud we prefer not to say. Fraud it is, and intended for the greedy maws of unprincipled dealers and collectors and never for circulation, consequently it is not a coin; nor is it exactly a counterfeit; as it is in no way an imitation of the genuine cent of the date in question; but merits only the appellation we bestow upon it; it is considered a disgrace to any collection in which it may be found.

Thus wrote David U. Proskey in the January 1881 issue of *The Coin Collector's Journal* regarding the 1823 restrike large cents. The cent restrikes of 1823, along with the well-known 1804, and the lesser known 1810, form a fascinating trio which, fortunately, numismatists today hold in higher regard than did Proskey over a century ago.

The 1804 restrike was produced from an altered obverse die originally dated 1803 and a reverse die of 1820. These were primarily struck in copper although very rare tin composition examples are known.

Very few numismatists are aware of the 1810 tin restrikes which combine an 1810 dated obverse die with the same 1820 reverse die used for the 1804 restrikes. Only two examples are known.

The 1823 restrikes are perhaps the most common of the trio, yet hide a few surprises. These combine the 1823 normal-date obverse die with a reverse die of 1813. Copper examples are known in several different die states with the "uncracked" obverse being quite rare. A small number of 1823 restrikes are known in silver. Little is known regarding the circumstances surrounding these issues. Available evidence includes the surviving coins along with a few vague, often conflicting, historical references.

Historical References

The earliest printed record located by the author appeared in W. Elliot Woodward's auction catalogue of the Finotti Collection, November 1862. Lot 806 was described "1823. Splendid-uncirculated. Recently struck from the original die." This coin realized $3.50.

Combined with the previously quoted 1881 comments of David Proskey, we rationalize that the first 1823 restrikes were made in 1861 or 1862. Proskey mentioned that these were produced "under the supervision of U.S. Mint officials" which we are now certain was not the case.

Edward D. Cogan, in his auction catalogue of April 7-8, 1863, described lot 928: "1823 Uncirculated, re-struck from the original die, scarce." This coin sold for $3.75 to Joseph Zanoni. This reference appears to be the earliest use of the term "restrike" when describing these issues.

In March 1868, *Mason's Coin & Stamp Collector's Magazine* mentioned the 1823 restrike, stating "there has been a 're-strike' of this cent from the old obverse die, and the reverse die of another cent."

One year later, in an article titled "Peculiarities of American Coins" in the March 1869 issue of the same journal, Mason further discussed the 1823 restrike and also mentioned the recent appearance of the 1804 restrike:

> Several years ago a circular piece of copper of the size of a cent of the year 1823, made its appearance in Philadelphia. On one side was shown a Liberty head surrounded by thirteen stars, and underneath "1823." The other side had a wreath surrounding the words "one cent," and surrounded by the legend "United States of America." The nondescript was alleged to be a *re-strike* of the U.S. cent of the year 1823.
>
> It was really produced in this way: Somebody obtained an old die that had been used in making the obverse of the '23 cent, and another that had been used in making the reverse of the cent of 1818 [*sic*]. Planchets of copper being procured of suitable size, and the dies having a portion of rust removed, were forcibly driven against the piece of copper. The obverse die of 1823 was broken on the edge and cracked across the head—no matter, they were driven and re-driven against planchet after planchet. The latter not being protected by a collar, was bent out of shape by the blow, so that it became necessary to file off the edge, tool up the hair, and fix in such manner as to appear to the unsuspecting, like a veritable U.S. cent. Only a few were stated to have been made, so that the moderate sum of $3.00 was asked and obtained for them. During the year 1867 a great number turned up, and have doubtless been widely distributed.

> An obverse of the half-cent of 1811, and reverse of 1807 [*sic*] were similarly treated, but only a few were really made, and the dies were not broken. People call it a *re-strike* half-cent of 1811.
>
> During the year 1868, a third hybrid appeared, also in Philadelphia, purporting to be a re-strike of the cent of 1804. It is said that the reverse belonged to the issue of the year 1820, and that the other is thought to have been a pattern die that had never been made use of. However this may be, it is certain that both had suffered severely by the corroding tooth of time and oxygen.
>
> All the issues mentioned above may be readily known by even the tyro numismatist. United States coins they never were, and to the appreciative student they can never have any higher standing (if at all admitted into his cabinet), than such imitations of our country's silver money as are marked in the catalogues as *base*.

That same year, Edward Cogan offered an example in his September 27-28, 1869 auction. Based on these references, we will place the time of issue for the 1804 restrikes as 1868.

Returning to the 1823 restrike, perhaps the most valuable information is contained in an obscure auction catalog by Edward Cogan dated January 16, 1871. In his Catalogue of Coins and Medals, lot 331 sold for $2.75 and was described:

> 1823; re-struck from the original Obverse die, and the reverse die of 1816 [*sic*]; cracked in three places; the stars and date perfect, the head rubbed; rev., the "One Cent" imperfectly struck. This is one of forty-nine struck by the writer, for the owner of the dies, and must not be mistaken for one of those lately struck, in which the die shows much more damage.

These comments by Cogan are important as he identifies himself as the person who actually struck the 1823 restrikes and suggests the quantity of 49 examples struck before the dies cracked. Cogan in no sense implied that he owned an interest in the dies as would later be suggested. His actual words suggest that he did not own the dies when these were struck. He did imply that there were distinctly different emissions from these dies with one very recent to the time of this offering.

Almost eight years later, Cogan seemed confused about his own participation. In his December 1878 catalogue of the James E. Root collection, Cogan described lot 307:

1823 Beautiful uncirculated impression of the restruck cent. This is believed to be the only one struck before the die cracked. Very rare.

The library of the American Numismatic Society contains an undated, unsigned manuscript bound with the title *Numismatic Miscellany*. This handwritten manuscript was acquired from a Thomas L. Elder sale of July 1913 where it was attributed to Montroville Wilson Dickeson. The author wrote:

> In digging out the rubbish from the cellar of the Mint which was destroyed in 1815 [actually, January 1816], a small vault was found under the pavement—bricked up with the exception of a small hole, and in tearing away the wall a number of dies were found ... There were about one bushel, they were picked out by the workmen and finally sold as old steel to a worker in that metal. Some time after their disposition, Mr. James [*sic*] J. Mickley hearing of them endeavored to obtain them, but most of them had been worked over they being of the very best kind of steel. A number of them are now in his cabinet among which is that very scarce number, the halfpenny of 1811.

These comments by Dickeson (?) provide information about the discovery of the various dies which we believe is factual. As Walter Breen later noted, the minor inaccuracies are not sufficient to discount this as a source of historical information[Breen 1983, 316.] Later articles would suggest that Mickley, who was born in 1799, obtained the dies when he was just 17 years old. The above article does suggest that the dies were found in 1816, however, it does not state that Mickley acquired them in that year.

The various dies from Mickley's collection were listed in a November 1878 auction catalogue by M. Thomas & Sons. This sale, which was catalogued by Ebenezer Locke Mason, Jr., consisted primarily of foreign coins from Mickley's estate. Interestingly, the 1804 restrike dies supposedly owned by Mickley did not appear in this offering.

United States Steel, Dies, Hubs, &c.

$1.00	905	1784 Hub - Wilson [*sic*] Peale; *obv.*, Bust of Peale, slightly damaged, *unique.* [These are the dies for the Peale Museum Medal.]
$5.25	906	1799 [*sic*] 2 Hubs; *obv.* and *rev.* of Washington Medal, Presidency Relinquished, *very fine condition.*

Out	907	1797 1 Hub - John Adams, Mint Medal.
$0.25	908	1796 1 Hub - Letter Foundry of Philadelphia, Established 1796, Figure of Industry, etc., *fine*.
	909	1806 Hub; *obv*., United States Dime, *very good*.
	910	1806 Hub; *obv*., United States silver Twenty-five Cent Piece, *good*.
	911	1807 Hub; *obv*., Half Eagle, *good*.
	912	1811 2 Hubs; *obv*. and *rev*., United States Half Cent; *rev*. slightly damaged on edge.
	913	1816 2 Hubs; *obv*. and *rev*., United States Cent, *fair condition*.
	914	1817 2 Hubs; *obv*. and *rev*. United States Cent, *good condition*.
	915	1820 1 Hub; *obv*., Half Eagle, *good*.
	916	1 Hub; *rev*., United States Twenty-five Cent Piece, about 1820. [This may be the reverse die for the 1827 quarter dollar restrike.]
	917	Miscellaneous Lot Dies and Hubs; *obvs*. and *revs*. of American Coins, 8 pieces, *broken, and in poor condition*.
$0.25	918	2 Hubs - Jackson Inauguration Medal; *obv*. and *rev*. very fine.

Today, the American Numismatic Society Library contains a priced example of this catalogue with the notation "Out. Sold to U.S. Mint" penned beside lots 907 and 909 through 917. This comment suggests that the government bought the lots rather than confiscated them.

The following article appeared in the January 1879 issue of *American Journal of Numismatics* and included an account by R. Coulton Davis:

> The statement that the dies, hubs, &c. of U.S. Coins advertised for sale with the Mickley Collection, were seized by the United States authorities, has given rise to a great deal of comment. We have received from a gentleman in Philadelphia the following account of the affair.
>
> A few days previous to the sale, the authorities claimed the above, viz: some 20 obverse and reverse dies of U.S. Coinage, mostly in damaged and corroded condition, the same having

been condemned by the Mint authorities above "half a century ago" and as tradition says was the custom in those days, "sold for old iron." Since then we have grown more artful, and it has been deemed politic under existing laws, that the whole multitude of dated dies should be annually destroyed in the presence of three designated officers of the Mint. In the above described lots in the catalogue, there was not a complete pair of obverse and reverse dies. Even the obverse die of the half cent of 1811 was muled with the reverse die of a different year. We cannot conceive by what authority the government, after making sale of its "refuse material," could seize upon the same property without tending some compensation. There is scarcely a numismatist in the United States but who is aware of the existence and where abouts of similar dies, and who is also aware of the many "re-strikes," known to be such-being made from the dies, say of the 1804 cent, the 1811 half cent, and the 1823 cent outside of the Mint.

Philadelphia, December 1878. "Coulton"

From what we have seen in the public prints in reference to this matter, we infer that the government authorities were somewhat hasty in their action, and claimed the property without first satisfying themselves as to ownership. No one would for a moment suspect Mr. Mickley of any wrong in the matter. The affair was settled, we believe, by a payment to the family of the estimated value of the dies, which were then presented to the Mint, and subsequently destroyed.

The preceding account provides additional details of the coinage dies leaving the Mint and of Mickley's ownership of the same. We note that Davis mentioned these dies were condemned by the Mint authorities "above half a century ago." This comment suggests that these dies left the Mint sometime prior to 1829, which agrees with the earlier comments from Dickeson. Certainly the cent dies dated prior to 1816 could have come from this source, however, later date dies such as the 1820 reverse and 1823 obverse must have been from a source other than the 1816 cache.

In his 63rd sale of March 4-6, 1884, W. Elliot Woodward mentioned Mickley's ownership of the 1804 dies at lot 709, offering a tin example as "1804 From the original obverse die formerly owned by Mr. Mickley; tin, fine, and far rarer than originals."

Although they are of no value from a historical perspective, Harlan P. Smith's comments in his January 14, 1887 catalogue of the *Berlin Collection* are interesting:

> 98 1823 Uncirc.: restrike. This is the identical piece seized by the Treasury officials, and returned—the envelope is endorsed "1823 cent mis-strike, got out by mistake, a genuine coin."

The next report of historical information in our study of these emissions is an article by Charles Steigerwalt in the April 1907 issue of *The Numismatist*. This commentary requires careful consideration for its contents do not completely hold true:

> A certain kind of 1804 and 1823 cents have appeared in sale catalogues for years as "Mint Restrikes." The recent cataloguers may be excused on the plea of ignorance, but when these rank counterfeits are sold by those who have been doing so for years, it is time collectors knew their true character.
>
> While at a recent sale, the lacking information regarding the 1823 was given by an aged collector, who told how, years ago, he had found the dies in New York, probably sold with old iron from the Mint, brought them to Philadelphia, had a collar made, which was lacking, and the coins struck by a man named Miller on 7th St., that city.
>
> Later, the dies came into possession of a then leading dealer there and, when his store was sold out in 1885, the writer finding them among a lot of old dies purchased, they were at once destroyed so effectually that no more will ever come from that source. These coins never saw the Mint, and are counterfeits pure and simple.
>
> It was supposed the 1804 came from the same source as the 1823, but the originator of those disclaimed any knowledge of the 1804. An effort was made in a recent sale catalogue to throw an air of mystery around this 1804. That is simply ridiculous. The obverse has been identified as an 1803, but as that date was too common, a crude 4 was cut over the 3 and a reverse of the period after the fraction was omitted, probably of about 1816 or later, was used in striking these abominations. By whom struck is unknown, but it was at a period long after, when the dies were rusty, and certainly not in the Mint.

Who was the "aged collector" mentioned by Steigerwalt? Certainly it was not Mickley as he had long since passed away in 1878. Haseltine

may be a possibility even though he was a dealer rather than a collector. Perhaps such distinctions were not as important 90 years ago. If it was Haseltine, should we rely on the information presented? Haseltine's numismatic memory was a bit cloudy and inaccurate by the early 1900s. Many of the other actors involved had passed away by 1907. Dickeson died in 1882, Edward Cogan in 1884, R. Coulton Davis (who reported on the disposition of Mickley's coinage dies) passed away in 1888, Ed. Frossard in 1899, Mason in 1901, and J. Colvin Randall (who, prior to 1880, was an associate of Haseltine) also died in 1901.

Steigerwalt mentions that "the dies came into possession of a then leading dealer" and were discovered in his store when the store was closed in 1885. Today, it is generally believed that this dealer was Haseltine who relocated to New York City in 1885 to manage his brother's art gallery [Smith 1992, 112].

Steigerwalt's report provides the name of the person who supposedly struck the 1823 restrikes, Mr. Miller of 7th Street in Philadelphia. The aged collector who was the originator of these, however, according to Steigerwalt, had no involvement with the 1804 restrikes, thus, the 1804 and 1823 restrikes were made by different parties. These comments are in disagreement with the earlier remarks by Edward Cogan in 1871. It may be the case that Cogan was an intermediary between the aged collector and Mr. Miller.

Steigerwalt also states that he had purchased the dies and had them defaced "so effectually that no more will ever come from that source." Q. David Bowers reported to this author that he had seen the dies in the 1950s and recalls that they still seemed to be usable. The following illustration of the dies, found among photos at Bowers and Merena Galleries, shows that they were, indeed, still sound.

1823 Restrike dies.

In discussing the 1804 restrikes in 1908, Thomas L. Elder was apparently confused about their previous history when describing the Peter Gschwend specimen in his June 15-16 sale:

> 553 1804, The Dickeson restrike. This interesting note in ink by Mr. Gschwend accompanies the piece: "One cent, 1804. Muled with 1809 [*sic*] reverse in Phila. Mint. Bo't from M. W. Dickeson. Sept. 12th, 1881, in Pittsburg Exposition and State Fair," etc. Uncirculated, red.

Was Elder really confused about the 1804 restrike or was Dickeson the party who had these produced? Further evidence surrounding the origin of the restrikes was provided in an article in the December 1910 issue of *The Numismatist*. Under the title "Coin Dies Abandoned in the Old U.S. Mint" are found the reminiscences of Charles K. Warner:

> Various publications in recent months regarding the first United States Mint and the many discussions of the use and misuse of coin dies in early Mint days have been subjects of extraordinary interest to Charles K. Warner, the veteran medallist of Philadelphia.
>
> In comparison with the recent destruction of all coinage dies excepting those in actual use, and the now prescribed rigid regulations as to the care and destruction of dies, the following communication to *The Numismatist* from Mr. Warner makes interesting reading at this time:
>
> "I have at times in the past promised to write you something regarding my boyhood days around the old Mint building, which still stands on the east side of Seventh street and which was pictured and featured in the January and February *Numismatist* of this year.
>
> "My father, the late John S. Warner, who from 1823 to 1868 was the oldest established medallist in the United States, was well acquainted with a certain William Sellers who for many years conducted the business of a silversmith in the old Mint building [Joseph Sellers's name was on the front of the building in 1854. Sellers was in the silver-plate trade.] He occupied the entire first floor and a greater part of the basement. In the latter part of 1857 Mr. Sellers gave to my father a large number of old coin dies which were a part of a great lot of both obverse and reverse dies for all the silver and copper denominations that Sellers found in the old building when he first occupied it years before. It was

> stated at that time that these were found among general rubbish when the basement was cleaned. Most of the dies were considerably rusted, chipped on the edges, or cracked across the face. My father having no use for the old dies gave them to a particular friend of his, the then Chief Coiner of the Mint, which was then located in Chestnut street near Broad.
>
> "As a lad I frequently visited the old mint building on errands to Mr. Sellers for my father and often played about the building with a son of Sellers, who was about my age. I well remember the old vault. I could have easily explored the vault, and no doubt could have found many things which, if preserved, would be of great interest today, but lad that I was, I had no interest in such things."

This report does not add any specific details to the discussion of the 1804 and 1823 restrike issues. However, it illustrates the general concept that the old coinage dies were considered to be scrap metal and were very easily removed from the premises. Is it possible that the 1823 restrike die pair was among these old dies given by Sellers to Warner and by Warner to the chief coiner?

In his 1944 reference, *United States Copper Cents 1816-1857*, Howard R. Newcomb repeated various details found in the previous writings. Newcomb described die states of the 1823 issue and added "The late David Proskey fixed the date of this crooked work, restriking 1804 and 1823 cents, as about 1858 and that at about that time a bill was passed by Congress ordering the destruction of all old dies." (This bill was actually passed in 1869. It is interesting to note that Proskey objected to the 1804 cent restrikes while he was personally involved in the production of the Confederate half dollar restrikes produced by J.W. Scott in 1879.)

A few years later Dr. William H. Sheldon, in his 1949 reference *Early American Cents*, repeated comments from Proskey and Doughty:

> "This singular example of the low moral tone of some of our public officials made its appearance about the year 1860 ... in no (real) sense a re-strike ... but manufactured for the sole purpose of supplying coin dealers with a cent ... they could sell to young and ignorant collectors ..." I think we can let this pungent comment stand without elaboration. The coin results from a marriage of obverse 13 of 1803 (altered to 1804) with a reverse of 1818 [*sic*].

In the 1952 American Numismatic Association Convention sale, featuring the large cent collection of Homer K. Downing, the cataloguer for New Netherlands Coin Company (John J. Ford) noted that the 1804 restrike was "made by Mickley and [Edward] Cogan, circa 1860-68." This sale also included an 1823 restrike with the comments: "This is an impression with the badly broken obverse, made after Cogan and Mickley sold the dies, but prior to the silver examples." Apparently Ford mis-interpreted the Cogan statement and assumed that he was a part owner of the dies.

The next significant entry in the literature of these restrikes is an article by Lynn Glaser, "Restrikes and Mules of U.S. Coins Made Outside the Mint," which appeared in the September 1961 issue of *The Numismatist*. Glaser discussed the 1811 half cent and 1823 cent restrikes along with various other issues. However, he overlooked the 1804 cent restrike. Concerning the 1823 cent restrike, Glaser wrote:

> Cent 1823 made with obverse NA-2 of 1823 muled with the reverse of the 1813 cent. Forty-nine of these were struck in copper in 1862-63 by J. J. Mickley and Edward Cogan. They were originally sold for three dollars each. When the dies became broken they were sold. The actual manufacture of the coins was done by Miller of 7th St., Philadelphia. After Cogan and Mickley sold the dies additional copper impressions were made by the new owner. These are seen with a crack on the face of the obverse varying in length. The dies are believed to have been owned by Dr. M. W. Dickeson and later by Haseltine. Haseltine is supposed to be responsible for a few silver pieces apparently made in 1878-79. After this more copper pieces were struck. Charles Steigerwalt supposedly found the dies in Haseltine's store sometime before 1907 and defaced them. Recently the defaced dies were offered to a collector for several thousand dollars.

In this article Glaser noted "Ray Williams [Williamson] maintains that dies were sold as scrap when the Mint was moved in 1832-33." Although Glaser did not provide the source for this statement, it undoubtedly refers to R.H. Williamson, "A Visit to the U.S. Mint in 1812," *The Numismatist*, January 1951, pp. 4-10. At p. 9, Williamson quotes the visitor as observing "After the new mint went into operation the machinery of the old mint was sold under the auctioneer's hammer, mostly by weight as old metal."

Don Taxay devoted a few pages to the subject in *Counterfeit, Mis-Struck, and Unofficial U.S. Coins,* published in 1963. New information

provided by Taxay was, unfortunately, poorly documented. Most of his report simply repeats previous documents.

> In January 1816, the Mint caught fire and much of its heavy machinery was destroyed. Some time later, as men were clearing away the debris, a small subterranean vault was unearthed and its contents, consisting of several old dies, were sold to a worker in scrap steel. [See Dickeson Manuscript, above.] The dies were then resold to the budding numismatist J. J. Mickley, in whose possession most of them remained over half a century, before being re-appropriated by their original owner. [See AJN letter, above.]
>
> After Mickley's death, a great many of his coins were sold at public auction (November 1878) by Moses Thomas and Sons, of Philadelphia, the catalogue having been prepared by the well known dealer Ebenezer Mason. Although the collection consisted mostly of foreign coins, lots 905 through 918 are of considerable interest to us. They are described under the heading "U.S. Steel Dies, Hubs, etc.", and include no less than seventeen obverse and reverse dies for U.S. coins! Lot 912 reads "1811 2-Hubs [dies] obv. and rev., United States half cent; rev. slightly damaged on edge." The reverse was actually Gilbert Variety 1 of 1802, and from this muling, Mickley had struck off six pieces on bright red copper planchets, the dies having first been retooled and carefully polished in order to produce "proofs." ...
>
> Among the dies that never returned home was an odd pair (obv. 1823, rev. 1813) for striking large cents. Mickley had sold the dies, in cracked condition, to Dr. M. W. Dickeson who, after taking several impressions, resold them to J. W. Haseltine. The few silver impressions extant are thought to have been struck by Haseltine in 1878 or 1879. Sometime prior to 1907, Charles Steigerwalt (the official counterfeit detector of the A.N.A.) discovered the dies in Haseltine's store and defaced them. They are believed, however, to still be in numismatic circulation. ...
>
> We should mention here that the 1804 and 1810 large cents with the reverse of 1820 were, in all probability, struck outside the Mint, despite Proskey's assertion to the contrary. The 1804 obverse has been crudely altered from S-261 of 1803 by means of a graver (not a punch) and both pieces are much inferior to the standard set by J. R. Snowden's productions.

Jeffrey and Paul Oliphant wrote an article which appeared under the title "Large Cent Restrikes" in *Penny-Wise* for September 1970 and *The Numismatist* for February 1971. The Oliphants presented much of the known information, relying on Taxay's reference cited above. They discussed specific details of the 1804, 1810, and 1823 restrike emissions described below.

Walter H. Breen added background information in his *Encyclopedia of United States Half Cents*, published in 1983. These notes are contained in the listing of the 1811 restrike half cent.

> Mickley's ownership of the dies was established by the Moses Thomas & Sons auction of his estate, November 1878. The catalogue described a large number of dies and hubs, mostly of half eagle denomination or more obscure, but the 1811 half cent die and the reverse used with it were clearly in evidence. According to lot 408 of the Cogan sale, December 16-18, 1878, an agent of the Mint repurchased (not seized, as the newspapers reporting the Mickley sale said had been done) all of the dies and hubs which had been mint products. This was a curious courtesy indeed, as today they would merely be confiscated and their owner would be lucky to escape a prison sentence.
>
> It was a little more difficult to establish when and how Mickley obtained the dies. The most varied surmises have been fabricated and published. There were at least two occasions when the Mint sold obsolete, rusted, and broken dies without further defacing them, as scrap metal. One of these was in 1816, the other in 1833. Documentation of which occasion gave Mickley his opportunity to buy them is found in a bound manuscript [Dickeson manuscript, above] in the Museum of the American Numismatic Society. The museum buyer obtained this manuscript at a Thomas L. Elder sale, July 18, 1913. It contains abundant internal evidence that it was written about 1859-61 by Montroville Wilson Dickeson, M.D.; it contains notes on a hundred or more miscellaneous numismatic subjects, including drafts of long sections of his *American Numismatic Manual.*

Walter Breen's *Complete Encyclopedia of U.S. and Colonial Coins* does not add anything new to the discussion. Here, Breen suggests that the 1804 issues were produced about 1858 (repeated from comments by Proskey) from rusted dies retrieved from scrap metal sold by the Mint in 1833. Concerning the 1823 issues, Breen provided four different

entries representing three distinct issues of the copper restrike (1862, 1863-79, and 1879-1900) along with the 1879 issue in silver.

Factual Information

Much of the past literature on the restrikes repeats earlier comments usually without the advantage of documentation. The following statements summarize details which are known facts:

- The 1804 restrikes were known by at least 1869.
- The 1804 restrikes are known in copper and tin, all in approximately the same die state.
- The 1804 restrikes were made by/for a different party than were the 1823 restrikes.
- Mickley's dies were reacquired by the government in 1878, however, those did not include the 1804 dies.
- The restrikes of 1810 are known only in tin. These share the same reverse as those dated 1804.
- The 1823 dies were still in existence a few years ago.
- The 1823 restrike was known as early as 1862.
- 1823 restrikes exist in copper and silver and are known in various die states.

Speculative and Other Information

The following summary is of details that are not documented, or the documentation has not been seen by this author. Some of these statements may be true, while others may be speculation on the part of past authors. The statements to follow have not been substantiated.

- The Mint sold scrap dies in 1833.
- Mickley owned the dies for the 1804 restrike.
- The 1804 and 1823 restrikes were produced in 1858, according to Newcomb who quoted Proskey.
- 1804 restrikes were produced by Cogan and Mickley circa 1860-68.
- 49 examples of the 1823 restrike in copper were produced before the dies cracked.

- Some of the 1823 restrikes were struck by Mr. Miller of 7th Street, Philadelphia.
- Cogan and Mickley jointly owned the 1823 restrike dies.
- Cogan and Mickley sold the 1823 dies to Dickeson who had additional examples produced.
- Dickeson sold the 1823 dies to Haseltine who had silver examples produced, circa 1878-79.
- Charles Steigerwalt purchased the 1823 dies from Haseltine in 1885 and defaced them.
- Additional copper examples of the 1823 restrike were produced as late as 1900.

Proper Name for the Restrikes

Edward D. Cogan referred to the 1823 issue as a "restrike" in 1863. The term has since been used for all of the cent issues privately produced, along with various other issues produced both in and out of the Mint. Alternatively, Don Taxay suggested several terms to better describe certain scenarios regarding coins produced later than the date shown. These terms summarized in Appendix A, below. [Taxay 1963, 15-17]

This author is continuing to call these emissions "restrikes" based on numismatic tradition. Deciding on the proper name will likely give rise to considerable discussion among numismatists. While considering the possibilities, remember the words of W. Elliot Woodward in his 21st sale in 1879. Lot 878 was described "1804 Restrike, perfectly uncirculated, guaranteed original."

Composition

During the course of this study, the author felt it would be important to discover the specific composition of the "white metal" 1804 and 1810 restrikes along with that of the 1823 silver restrike. For these tests, the assistance of David Lange and William Metropolis was obtained. Lange is the electron microprobe specialist at the Department of Earth and Planetary Sciences at Harvard University. Metropolis is Assistant Curator of the Mineralogical Museum at Harvard.

The chemical composition was determined by electron microprobe analysis with each sample checked at five different points. This test

compared x-ray energy levels of the sample to those of known sources to determine the elements present. The composition was reported as a percentage of the total weight of the sample. Readings were taken at a depth of five microns. Performed in a non-destructive manner, this test has significant limitations. Under ideal circumstances, the sample would be polished to remove surface roughness and contaminants (corrosion or toning), yielding more accurate results. For obvious numismatic considerations, such polishing was to be avoided in this situation.

1804 "White Metal" (Tin) Restrike

	A	B	C	D	E	Average	Standard Deviation
Tin	92.5	95.6	93.7	92.5	93.6	93.6	1.3
Copper	2.3	0.8	0.5	1.3	0.3	1.0	0.8
Lead	1.4	0.4	0.7	0.5	0.5	0.7	0.4
Total	96.2	96.8	94.9	94.3	94.4	95.3	1.1

Based upon the preceding, the 1804 restrikes should henceforth be described as tin. The missing 4.7% is due to surface corrosion, sample roughness, other trace elements, and testing limitations.

1810 "White Metal" (Tin) Restrike

	A	B	C	D	E	Average	Standard Deviation
Tin	96.7	96.4	95.4	97.5	97.3	96.7	0.8
Copper	0.5	0.4	0.4	0.3	0.2	0.4	0.1
Arsenic	0.0	0.2	0.2	0.0	0.0	0.1	0.1
Lead	0.6	1.0	1.5	0.6	0.7	0.9	0.4
Total	97.8	98.0	97.5	98.4	98.2	98.0	0.3

As with the 1804 issue, this should also be described as tin. The missing 2.0% is due to surface corrosion, sample roughness, other trace elements, and testing limitations.

1823 Silver Restrike

	A	B	C	D	E	Average	Standard Deviation
Silver	93.0	93.3	92.4	92.7	93.5	93.0	0.4
Copper	4.4	4.2	4.1	4.5	4.9	4.4	0.3
Gold	0.1	0.1	0.2	0.1	0.2	0.1	0.1
Aluminum	0.4	0.3	0.4	0.4	0.3	0.4	0.1
Sulfur	0.2	0.2	0.2	0.2	0.2	0.2	0
Total	98.1	98.1	97.3	97.9	99.1	98.1	0.6

This 1823 silver restrike should be described as "sterling silver," which has a theoretical silver content of 92.5% The missing 1.9% is due to surface corrosion, sample roughness, other minutely present trace elements, and testing limitations.

Lange suggested that the amount of copper present in the tin restrikes may have been partly from the composition of the sample, however in the case of the 1804 restrike (which has more copper than the 1810), may also have been deposited on the dies during the striking of the copper restrikes and transferred to the surface of the tin example.

Given the testing limitations mentioned above, and the reasonably close percentages of lead in the two tin samples, Lange and Metropolis feel comfortable suggesting that these two tin restrikes came from the same planchet source.

Restrike Issue Dated 1804

Obverse: This die was originally used to produce 1803 Sheldon-261. The die had become severely rusted and extensively cracked, was re-annealed, altered to 1804, ground down to remove some rust, and sharpened in various details. The date has the digit 1 recut with a flat top and broad base, 8 has been recut with the new 8 being of a different style (the center stroke thick, unlike the original), the new 0 is narrower with a thinner base and top, and part of the curve of the 3 is left of the base of the 4 with the corner of the 3 right of the top of the 4.

Reverse: Same as 1820 Newcomb-12, however, badly worn and rusted, ground down to remove rust, and retooled. Leaf point below D is between the inner and outer curves. The highest leaf is right of the final S, nearly half-way to the O. Another leaf point is below the right upright of F. The leaf point below C in AMERICA is centered beneath that letter, which is nearly closed. All letters are well-spaced although RI are rather close. New border dentils of sawtooth shape have been engraved over the original dentils, which were nearly round.

Die State: The obverse die has an arc crack equivalent to the very latest state of 1803. A second crack from the rim at 7:30 curves through the lower hair towards the first crack. A thin branch below this crack curves through the lower curls to the 1 in the date. An additional crack through the hair reaches the upper lip, eventually extending to the rim at 2:30. This crack seems to diminish as die rust advances. All examples of the 1804 restrike seen by the author appear to be in approximately the same die state.

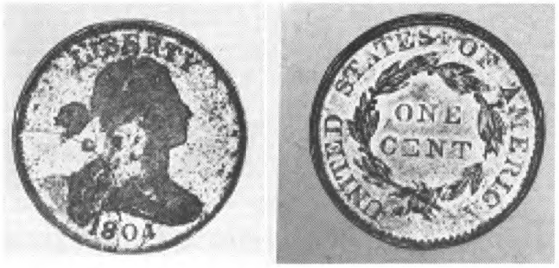
Rarity: Various estimates have been published at different times. Probably in the range of 1,000 to 1,500 copper examples survive. Rarity of the tin composition examples is not specifically known. Probably not more than three or four exist, of which only one has been traced by the author. Also in existence are obverse and reverse uniface examples in tin, both extremely rare.

Remarks: Struck in 1868, based primarily on the comments of Ebenezer Locke Mason, Jr., who wrote in 1869 "During the year 1868, a third hybrid appeared, also in Philadelphia, purporting to be a restrike of the cent of 1804." Since the reverse die was common to both the 1804 and 1810 restrikes, both are known in tin, and the analysis of tin examples of each suggest the same planchet source, we believe that both of these were made at approximately the same time and by the same person.

Specifications: Most examples are known in copper and were struck on broad planchets ranging from 28.5 to 29 mm. Weight of these ranges from 155 to 190 grains.

A small number are known in tin which in the past have been called "white metal." The tin example studied for this report has a diameter of 28.5 mm., weight of 157.2 grains, and is 93.6% pure tin.

Census of tin restrike:



- Fewsmith Collection; E. L. Mason 10/1870: 2434; E. L. Mason; W. J. Jenks Collection; W. Elliot Woodward 9/1880:

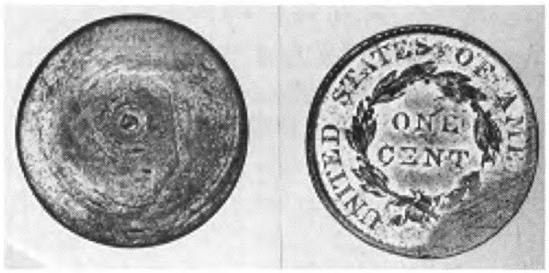
805; Shinkle Collection; J. C. Morgenthau & Co. 4/1932: 1 $4.25; Pennsylvania Cabinet; Bowers and Merena 3/1997: 149.

- Unknown private collection.
- An example was offered by W. Elliot Woodward, 3/1884: 709.

Census of uniface obverse restrike:

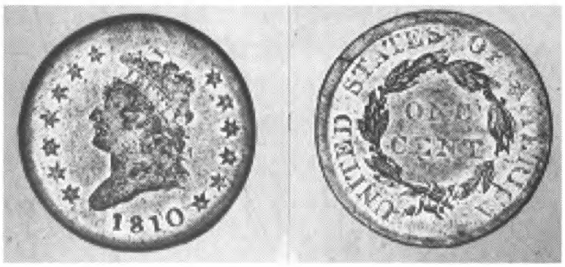
- George Parsons Collection; Henry Chapman 6/1914: 344; Shinkle Collection; J. C. Morgenthau & Co. 4/1932: 2; not traced today.

Census of uniface reverse restrike:



- George Parsons Collection; Henry Chapman 6/1914: 348; Shinkle Collection; J. C. Morgenthau & Co. 4/1932: 3; Pennsylvania Cabinet; Bowers and Merena 3/1997: 150.
- Henry Chapman; Henry Hines; Willard C. Blaisdell; 1971 ANA (Stack's): 253; present location unknown to the author.

Restrike Issue Dated 1810



Obverse: Die of Sheldon-285. Broad coarse dentils. L and Y are low. I, base of R, and left upright of T are repunched. I is high and leans right. A hair lock before the ear curves to the left and ends in a point.

Reverse: 1820 Newcomb-12. This is the same as the 1804 restrike reverse and in approximately the same die state.
Die State: Cracked through bases of 1810 and all stars at the right. A fainter crack joins stars 2 and 3. At least three sets of clash marks are visible. The dentils are blurred by flowlines from the stars.
Rarity: Just two are known to exist.
Remarks: An obverse die trial exists, although its current location is unknown. The example from a Maine private collection was described by Morton Stack in the September 1943 issue of the *Numismatic Review* as a "remarkable and apparently unpublished trial piece." These were probably struck in 1868 and almost certainly by the same party responsible for the 1804 restrikes. See Remarks above, at 1804, for more details.
Specifications: The Wilder specimen (listed below) examined for this study is 28.7 mm. diameter, weighs 113.1 grains, and is 96.7% pure tin.

Condition Census:

- Lyman Wilder Collection; John W. Haseltine 5/1879 $2.50; David Proskey; Howard Gibbs; 1952 ANA (New Netherlands Coin Co.): 1990; Dr. James O. Sloss; Pennsylvania Cabinet; Bowers and Merena 3/1997: 151.
- Maine private collection; Stack's; unknown; Stack's 3/1993: 2548; Jeffrey Oliphant.

Restrike Issues Dated 1823

Obverse: The obverse of 1823 Newcomb-2, the normal date. The sixth star points slightly left of the coronet point. This die has been retooled. The digit 3 has a new curved top. The hair and ear have been re-engraved in the die. During production of the 1823 "original" large cents, this obverse die developed rim breaks from 9:00 to 12:00.

Reverse: This is the same die used for 1813 Sheldon-293, however, now rusted and dished. The border is weak with few dentils remaining. The final die state for the 1813 usage includes a faint die crack through the tops of ITED ST and the bottom of ED ST.

Die States: This information is compiled from observations of the author in conjunction with an article by Richard Punchard, "The 1823 Restrike Cent," *Penny-Wise*, Vol. 14, 1980, page 193.

Die state 1.

1. The rim breaks mentioned for the original 1823 issue are always present unless they have been removed through tooling. In this die state, these rim breaks extend from the right side of star 4 to a point between stars 6 and 7, however, do not touch any stars. No other die cracks are seen. The reverse is as the final die state of 1813 described above. This is apparently the 1862 issue with 49 pieces struck, according to Edward Cogan. Most surviving examples from the uncracked die state have the rim break tooled away and dentils engraved to simulate original 1823 cents. In *The Cent Book*, John D. Wright commented "I have seen ten unbisected examples, and eight of these had the obverse rimbreak tooled off to try to pass as original 1823 cents." The author of this report has observed three of these with the rimbreak removed, all three appearing to have the same workmanship.
2. An additional small rim break has developed over star 7. A bisecting die crack has its beginnings at the rim break between stars 4 and 5, crossing the head of Liberty to star 12. The reverse remains as described above.
3. The bisecting crack is much heavier and continues from star 12 to the rim. The reverse is as above.
4. An additional obverse die crack develops from the rim between stars 1 and 2, crossing the chin and joining the main crack on Liberty's cheek. The reverse has a light die crack from the rim through the

right side of D, arcing up through the wreath and continuing over ONE, through the top of E, to the right side of the wreath. An additional crack joins the lower right side of the final S to the wreath below.

Die state 4.

5. The obverse rim breaks are complete from stars 4 through 7 and the cracks are much heavier. The reverse crack has advanced through the right wreath and R to the rim. Other minor cracks are present.

Die state 5.

6. The final die state has the obverse cracks very heavy and has a branch of the reverse crack through the upper left wreath, contiuing to the rim between TE of STATES. Additional minor cracks on both obverse and reverse. Refer to the photos of the 1823 restrike die pair for the theoretical terminal die state.

Die state 6.

Rarity: The copper version is quite common with possibly as many as 1,500 to 2,000 surviving. In contrast, the silver issue is a rarity with very few in existence. Although no census has been compiled, probably not more than a dozen examples remain today.

1823 silver restrike.

Remarks: The 1823 silver restrike examined is from die state IV, certainly not the latest die state as some have suggested. The 1823 copper restrike was known as early as 1862 and was probably first struck in that year. Later die states, with the obverse cracked, were most likely struck in 1867, based on the comments of Ebenezer Locke Mason, Jr., who said "During the year 1867 a great number turned up, and have doubtless been widely distributed." Additional examples were supposedly struck at a later date, perhaps in the late 1870s or even later.
Specifications: Struck in copper and silver. The silver example studied for this report has a purity of 93.0%.

Condition Census:

Many copper examples are known. There is no accurate Condition Census information for the silver version of the 1823 restrike. The following listing includes several silver examples known to the author:

- Bowers and Merena 3/1997: 156.
- Auction '80, Lot 1383.
- Reported by Frank F. Sprinkle, *Penny-Wise*, Volume X, 1976, page 215.
- Bowers and Ruddy Galleries. No mention of the composition was made when this coin was offered in an early *Rare Coin Review*.
- Thomas P. Warfield Collection. Associated Coin Auction Co., October 28-29, 1955.

Certainly, other auction appearances have taken place since these were produced over a century ago. This issue is rare and unusual, deserving more careful documentation.

Summary

Very little is actually known regarding these issues. The 1804 and 1810 restrikes share a common die and were most likely struck by or for the same person in 1868. The 1823 restrikes may have been struck on two or three different occasions by a Mr. Miller on behalf of an "aged collector" or by Edward D. Cogan. Who was the aged collector? Concrete evidence may never be found as Steigerwalt took the secret to the grave. We need to find a collector or dealer who was active in the 1860s and still living in 1907.

Mickley is often the name given when the production of these issues is discussed. He reportedly owned the 1804 dies. Did he ever own the 1823 dies? Did Mickley actually have the restrikes produced, or was he only an accomplice? The study of these issues has provided many more questions than answers and has revealed that many previously supposed "facts" are guesswork or theories. The true story may never be known.

Appendix A

The following terms are from Don Taxay's *Counterfeit, Mis-struck, and Unofficial U.S. Coins*, published in 1963. These were adapted from notes by Walter Breen circa 1950, which are located in the *Walter Breen Numismatic Archives* housed in the American Numismatic Society library.

Official Restrike: An impression from a correctly matched pair of dies, made later than the year shown, and intended for an official purpose.

Piece de Caprice: A coin struck from official hubs or dies, or from simulated official dies, *illegally or unofficially*, in or out of the Mint, by either Mint personnel or laymen—and solely for the purpose of providing a numismatic curiosity or rarity.

Unofficial Restrike: An impression made from a correctly matched pair of *original* dies, but after the date shown, and without legal authority (though possibly with official sanction).

Simulated Restrike: An impression from a pair of dies one or both of which were manufactured after the date shown, and in a

similitude of the original dies (e.g. 1801, 1802, 1803 dollar restrikes).

Fantasy Restrike: An impression from a pair of dies one or both of which were manufactured after the date shown, but for which year no original dies or coins (of that denomination or type) ever existed (e.g. 1804 dollar).

Simulated Series Coin: An impression made from a correctly matched pair of dies in the year shown, but unofficially or illegally after the series or design has been discontinued (e.g. 1884, 1885 Trade dollars, 1913 Liberty Head nickel ...).

Piece de Caprice Mule: An impression made from unmatched dies, either in the year shown, or at a later date, in or outside the Mint. These may be bi-metallic, bi-denominational, bi-metallic *and* bi-denominational, with double obverse or reverse, or from some other unusual combination of dies.

The best definition for the cent restrikes seems to be *Piece de Caprice*. The dies used were certainly official dies yet the restrikes were unofficially produced at a later date, outside the Mint.

Appendix B

Cast of Characters

Much of the following is from Pete Smith's *American Numismatic Biographies* published by the Gold Leaf Press, Rocky River, Ohio, 1992, with permission of the publishers.

Cogan, Edward D. Numismatic dealer and auctioneer. Born in England January 5, 1803 and died April 7, 1884 in Brooklyn. Cogan immigrated to the United States in 1853 and began his coin business in Philadelphia in 1855, relocating to New York City in the 1860s. From his first coin sale on November 1, 1858, he continued with 69 sales through 1879. He was the first to produce a catalogue with photographic plates, the Mortimer L. MacKenzie auction held June 23, 1869. Cogan styled himself as America's first full-time coin dealer.

Davis, Robert Coulton. Collector. Born in Philadelphia circa 1813 and died August 25, 1888. Davis was a collector who specialized in pattern coinage. He penned a series of articles titled "Pattern and Experimental Issues of the United States Mint" which appeared in the Coin Collector's Journal. Davis also collected letters and autographs of the signers of the Declaration of Independence.

Dickeson, Dr. Montroville Wilson. Author. Born in Philadelphia in 1813. Died April 14, 1882. Dickeson's had many interests including coins and American Indians. He graduated from the University of Pennsylvania and worked in archeology in the Mississippi Valley from 1837 to 1844. Numismatically, Dickeson wrote *The American Numismatical Manual of the Currency or Money of the Aborigines, and Colonial, State, and United States Coins*, first published in 1859. He also produced colonial copies and was, according to Pete Smith, an intermediary in the sale of dies used to produce the 1804 large cent restrikes.

Frossard, Édouard. Numismatic dealer and auctioneer. Born in Switzerland in 1837 and died in Brooklyn April 12, 1899. Frossard was wounded in the Civil War. His numismatic interests began as a collector in 1872, with his first auction being held in 1878. From then until his death in 1899, he conducted 176 auction sales. He served as editor of J. W. Scott's *Coin Collector's Journal* in 1875 and began his own publication, *Numisma*, in 1878, which continued for several years.

Haseltine, John W. Numismatic dealer and auctioneer. Haseltine was born in Philadelphia September 6, 1838, and died in the same city February 28, 1925. He was a captain with the Second Pennsylvania Cavalry and was wounded in the Civil War. According to Pete Smith, his numismatic activities included a partnership with E. L. Mason in 1869. He conducted 85 auction sales from 1870 to 1898 and issued fixed price lists from 1872 to 1876. In 1885, Haseltine relocated to New York, returning to Philadelphia in 1897. Haseltine was involved as an agent for the sale of Proof pattern coins and restrike rarities which came from the Philadelphia Mint. He was the son-in-law of William Idler and the father-in-law of Stephen K. Nagy.

Mason, Ebenezer Locke, Jr. Numismatic dealer, auctioneer, and author. Coin and stamp dealer who conducted business in Philadelphia, New York, and Boston. Mason conducted 35 auctions from 1868 to 1890 and issued fixed prices lists from 1866 to 1890. Mason published several periodicals from 1867 to 1890 including *Mason's Coin and Stamp Collector's Journal, Mason's Coin Collector's Herald,* and *Mason's Coin Collector's Magazine*. Mason died in Philadelphia September 1901.

Mickley, Joseph J. Collector. Born in Pennsylvania February 24, 1799 and died in Philadelphia February 15, 1878. Mickley conducted a business of tuning and repairing pianos and other musical instruments. His numismatic interests began as a teenager searching for a cent from his birth year. His collecting interests were varied. Much of

his collection was stolen on April 13, 1867. The remainder was sold to W. E. Woodward, except for some pieces held until after his death

Miller of 7th St., Philadelphia. Nothing of Mr. Miller is known except that his name was given by an "aged collector" in conjunction with the issuance of cent restrikes. The aged collector mentioned by Steigerwalt is also unknown.

Proskey, David U. Numismatic dealer and author. Born in New York December 12, 1853 and died in New Jersey, August 16, 1928. Proskey's numismatic career began in 1873. He conducted five sales from 1876 to 1887. He also worked for J. W. Scott & Co. and catalogued many of their sales from 1877 to 1886. In 1888 he joined Harlan P. Smith to form New York Coin and Stamp Company. Proskey was editor of Scott's *Coin Collector's Journal* and wrote a series of articles on large cents for that publication.

Randall, J. Colvin. Collector and dealer from Philadelphia. Randall conducted one auction sale on November 28, 1882. He died in 1901. Randall was an associate with Haseltine and, in fact, formed the collection which would be the basis for the Haseltine auctioneer.

Scott, John Walter was born in England, November 2, 1845 and died in New York City, January 4, 1919. His first firm was named J. W. Scott Company which he sold in 1884 while a later firm was J. W. Scott & Co., organized in 1889. Scott was the publisher of *Coin Collector's Journal*. He also held numismatic and philatelic auctions with 53 of his 146 sales including numismatic material. Scott is well-known for his Confederate half dollar restrikes and tokens.

Sellers, Joseph. Involved in the silver-plate trade. His name was on the front of the U.S. Mint building in 1854.

Sellers, William. Silversmith. This is the Sellers name given by Charles Warner in his 1910 article in *The Numismatist*. Sellers was a silversmith who conducted business in the Mint building. He gave a large number of old coinage dies to Warner's father in 1857.

Smith, Harlan P. Numismatic dealer and auctioneer. Smith was born in Hamilton, New York March 18, 1839 and died in New York City March 2, 1902. Prior to his numismatic activities, Smith was involved in the wholesale fruit business. With Henry G. Sampson, he conducted four auction sales from 1880 to 1881. Under his own name, he conducted another 21 sales from 1881 to 1887. At this time, Smith joined with David Proskey to form New York Coin and Stamp, a partnership that continued until Smith's death.

Steigerwalt, Charles. Numismatic dealer, publisher, and auctioneer. Steigerwalt was born June 28, 1858 in Lancaster, Pennsylvania and died there March 29, 1912. His numismatic business began in 1878 including the publication *The Coin Journal*. He conducted 71 auction sales from 1881 to 1910 and issued fixed price lists during most of these years. In 1895, Steigerwalt began a publication titled *Numismatic News*. For many years he filled the position "counterfeit detector" for the American Numismatic Association.

Thomas, Moses and Sons. General auctioneers who conducted the November 1878 sale of Mickley's collection, including coinage dies which were retrieved by the government.

Warner, Charles K. Medallist from Philadelphia whose reminiscences appeared in the December 1910 issue of *The Numismatist*.

Woodward, W. Elliot. Pharmacist, real estate developer, numismatic dealer, and auctioneer. Born in Oxford, Maine, November 29, 1825, and died in Roxbury, Massachusetts, January 5, 1892. Woodward was very active in the numismatic arena from 1860 to 1890. During this time he issued fixed price lists and conducted 112 auction sales. A few of Woodward's sales were non-numismatic including books, minerals, and other items.

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